


## Bulk growth and analysis on luminescence, third order nonlinear optical, laser damage threshold, dielectric and thermal properties of KDP crystal doped with BTZC complex

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# Bulk growth and analysis on luminescence, third order nonlinear optical, laser damage threshold, dielectric and thermal properties of KDP crystal doped with BTZC complex

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## ABSTRACT

The  $34 \times 10 \times 06 \text{ mm}^3$  bulk single crystal of bis-thiourea zinc chloride (BTZC) doped potassium dihydrogen phosphate (KDP) material has been grown from solution evaporation growth technique. The color centered photoluminescence nature of grown crystal has been investigated in visible region of interest. The He-Ne laser assisted Z-scan analysis has been carried out to explore the promising third order nonlinear optical behavior of BTZC-KDP crystal. The origin of nonlinear refraction ( $n_2$ ), the absorption coefficient ( $\beta$ ) and susceptibility ( $\chi^{(3)}$ ) has been discussed and their respective magnitudes have been determined using the Z-scan transmittance data. The high magnitude of laser damage threshold ( $\text{GW}/\text{cm}^2$ ) of grown crystal has been determined using the 1064 nm Nd:YAG laser. The influence of increasing temperature on dielectric constant and dielectric loss of pure and BTZC doped KDP crystal has been comparatively investigated. The thermal decomposition and the melting profile of BTZC doped KDP crystal has been investigated by means of simultaneous thermogravimetric and differential thermal analysis.

## ARTICLE HISTORY

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## KEYWORDS

Crystal growth; Z-scan study; dielectric studies; thermal studies; LDT; photoluminescence study

## 1. Introduction

In the current technological era, the nonlinear optical (NLO) single crystals play the crucial role in designing, tuning, processing and fabricating the hi-tech devices that encourage the use of NLO crystals in photonics, optoelectronics, laser frequency conversion and integrated optic applications [1,2]. The potassium dihydrogen phosphate (KDP) crystal shows high technological impetus for industrial applications owing to high NLO response and excellent optical homogeneity which are prerequisite parameters for designing optical switching device. For the enhancement in desired qualities of KDP crystal various experimental approaches (doping of additives or different growth techniques) have been attempted, however, the stress has been given on doping technique. In literature majority of investigations were reported on enhancing an effect of amino acids (glycine, L-alanine, L-arginine, L-histidine, L-valine) on nonlinear optical property of KDP crystal [3–5]. The influence of formic acid, maleic acid, citric acid and oxalic acid on SHG efficiency, third order nonlinear optical (TONLO) and dielectric properties of KDP crystal have been extensively studied [6–8]. In addition, the impact of metallic impurities (Li, Ca, Ce and V) and different dyes on optical, mechanical, thermal and dielectric traits of KDP crystal has also been investigated [9–11]. In our recent investigation, a semi organic thiourea metal complex bis-thiourea zinc chloride (BTZC) has been doped in KDP crystal and interesting results have been observed. The doping of BTZC [12] and BTNN [13] has inculcated large enhancement in SHG efficiency, dielectric quality, optical transparency and crystalline quality of KDP crystal.

Present communication is the extended work which has been accomplished by achieving the bulk single crystal growth and investigation of photoluminescence, dielectric, laser damage threshold, TONLO and thermal properties of BTZC doped KDP crystal to explore the vitalized technological applications.

## 2. Experimental procedure

The BTZC salt was synthesized using the AR grade zinc chloride and thiourea in a molar ratio of 1:2 and double distilled water as a solvent. In order to dope BTZC the supersaturated solution of KDP salt was prepared at room temperature. As SHG efficiency of 0.2 mol of BTZC doped KDP salt is found higher in our previous studies [12], the same BTZC doped KDP single crystal was further purified two times by recrystallization process. The optical quality BTZC doped KDP (BTZC-KDP) single crystal grown at constant temperature of  $35^\circ\text{C}$  within the period of two weeks is shown in Figure 1(a). The dimension of BTZC-KDP crystal grown by self-nucleation process is noticeable which is found to be  $34 \times 10 \times 06 \text{ mm}^3$ .

## 3. Results and discussion

### 3.1. Optical studies

The study of relaxation of excited electrons from higher to lower energy states under certain conditions gives a specific color centered emission spectrum which is an ideal characteristic of a given material known as photoluminescence (PL) study. Following this study information of material can be scrutinized





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## १९७५ च्या आणीबाणीची ऐतिहासिक पार्श्वभूमी

प्रा. विधाते एन एन

एस के गांधी महाविद्यालय कडा ता आष्टी जि बीड

1972 च्या दुष्काळानंतर सलग तीन वर्ष देशात अन्नधान्याची टंचाई भासत होती. 1971 च्या युद्धाच्या वेळी लागू केलेला 'भारत संरक्षण कायदा' हा रद्द करण्यात आला नव्हता. या कायद्याचा आधार राजकीय विरोध दडपण्याचे शस्त्र म्हणून होऊ लागला. गुजरातमधील विद्यार्थी आंदोलन हे वसतिगृहातील भोजनाच्या वाढीव दरावरून सुरु झाले व त्याची परिणीती विरोधी पक्षांच्या राजकीय आंदोलनात झाली. परिणामी 3 फेब्रु, 1974 ला दोन तृतीयांश बहुमत असतानाही विधानसभा बरखास्त करून राष्ट्रपती राजवट लागू करण्यात आली.

गुजरातला मध्यावधी निवडणूक होवून काँग्रेसेतर पक्षांची सत्ता आली. गुजरात विधानसभेचा निकाल 12 जून 1975 ला आला. याच दिवशी अलाहाबाद उच्च न्यायालयाने इंदिरा गांधी यांची रायबरेली मतदारसंघातून झालेली निवड अवैध ठरवली. त्यामुळे जयप्रकाश नारायण यांच्या आंदोलनाला नैतिक अधिष्ठान प्राप्त झाले व बिहारमधील सर्वदलिय समन्वय समितीमार्फत बिहार विधानसभेला घेराव करण्याचा ठराव संमत झाला. गुजरातप्रमाणेच बिहार विधानसभा बरखास्त करावी असा लकडा विरोधी पक्षांनी लावला. पण पंतप्रधान इंदिरा गांधी यांनी ही मागणी फेटाळून लावत तसेच अलाहाबाद न्यायालयाच्या निर्णयाला सर्वोच्च न्यायालयात आव्हान देण्याचे ठरवले. विरोधकांना थांबायला वेळ नव्हता. इंदिरा गांधी यांना राजीनामा देण्यास भाग पाडावे म्हणून विरोधी पक्षांनी उघड व गुप्त मोहीम सुरु केली. दिल्लीच्या रामलीला मैदानातील जाहीर सभेत जयप्रकाश नारायण यांनी पोलीस व लष्कराला अन्यायी, लोकशाही विरोधी, दडपशाही करणाऱ्या सरकारच्या आज्ञा न स्विकारण्याचे आवाहन केले. तसेच बिहारमध्ये समांतर न्यायालये चालवण्याचे सूतोवाच केले. एकप्रकारे प्रशासकीय, न्यायीक, अनागोंदीची हे भाषण नांदी होते.

श्रीमती इंदिरा गांधींनी या पार्श्वभूमीवर पंतप्रधान पदाचा राजीनामा न देता, सर्वोच्च न्यायालयाच्या निर्णयाची वाट न पहाता 26 जून 1975 रोजी अंतर्गत आणीबाणीची घोषणा केली.

"26 जून 1975 च्या पहाटे जाहीर करण्यात आलेली आणीबाणी म्हणजे भारतातील राजकीय प्रकियेला मोठा हादराच होता. कायद्याच्या राज्याचा मोठ्या प्रमाणावर संकोच करण्यात आला. लोकांचे मूलभूत हक्क नाकारण्यात आले, कडक सन्सारशिप लादून वृत्तपत्र स्वातंत्र्यावर निर्बंध घालण्यात आले. अटकसत्र व कठोर

पोलिस कारवाईच्या कारा राजकीय विरोधांची गळवेपी करण्यात आली." आणीबाणीचे सर्व भाष्यकार या सगळ्याचा दोष इंदिरा गांधींच्या व्यक्तिमत्त्वाला देतात. पण आणीबाणी हा एका व्यक्तिचा वा कुटुंबाचा दुष्टपणा नव्हता, तर त्यामागे सखोल कारणे होती. त्यामागील राजकीय, सामाजिक, पार्श्वभूमी तपासून पहायला हवी. आणीबाणी हे राजकीय पध्दतीचे आपयश असून त्याचे मूळ प्रतिकूल राजकीय पध्दतीत आणि प्रतिकूल आर्थिक परिस्थितीत शोधयला हवे. मला वाटते, 'Political as well as economically, 1974 was year of trials and tribulations for the people. And for Gandhi her government. The serve economic visi had demoralized a leadership already badly shaken by two years or economic adversity, scarcities (specially of food) spiraling prices and unemployment were born a tobereflected, as they always had been in the past in social and political unrest.'<sup>2</sup>

"या पार्श्वभूमीवर गुजरातच्या अभियांत्रिकी महाविद्यालयाच्या वसतिगृहातील भोजनाचे दर वाढविताच मूलांनी त्याविरुद्ध सत्याग्रह आंदोलन उभारले. अन्नधान्याची कृत्रिम टंचाई निर्माण करून भाववादीचा लाभ करून कोण घेत आहे याची चिमणभाई सरकारला जाणव होती, तरीही त्यांच्याविरुद्ध उपाययोजना करण्याबाबत चिमणभाई पटेल यांचे मंत्रीमंडळ उदासीन राहिले." याविरुद्ध विद्यार्थ्यांनी आवाज उठविला. नवनिर्माण समितीच्या रूपाने गुजरातमधील विद्यार्थी शक्ती संघटीत झाली. तिने पटेल मंत्रीमंडळाविरुद्ध निदर्शनांचे सत्र सुरु केले. कोणत्याही राजकीय पक्षाची प्रेरणा या आंदोलनामागे नव्हती. विधानसभेच्या निवडणुकीत दारुण पराभव पत्करल्यानंतर विरोधी पक्षांचे मनोधैर्य हरपले होते. ते पुन्हा संपादन करण्यासाठी त्यांनी नवनिर्माण समितीचा पाठपुरावा सुरु केला. चिमणभाई पटेल यांनी राजीनामा द्यावा आणि विधानसभा विसर्जित करून फेरविडणूक घ्यावी या मागणीसाठी विद्यार्थ्यांनी आक्रमक आंदोलन सुरु केले. गुजरात विधानसभेच्या 168 जागांपैकी 140 जागा काँग्रेसने जिंकल्या होत्या. एवढे प्रचंड बहुमत असलेली विधानसभा विसर्जित करायला इंदिरा गांधी सुरवातीला तयार झाल्या नाहीत. पण गुजरातत विद्यार्थ्यांचे "हे आंदोलन झपाट्याने पसरले व राज्यात





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Math

# Performance Analysis of an Integrated Cellular and AD HOC Relay System

✉ Aruna Madhukar Kulkarni \*

## Abstract

In this paper, we propose a new wireless system architecture based on the integration of cellular and modern ad hoc relaying technologies. It can efficiently balance traffic loads and share channel resource between cells by using ad hoc relaying stations to relay traffic from one cell to another dynamically. However, the application demand and allocation could lead to congestion, if the network has to maintain such high resources for quality of service (QoS) requirements of the applications.

In our system, handoff area and queue are taken into consideration and new and handoff calls are given priority, respectively. We analyze the system performance in terms of the call blocking probability and queueing delay for new call requests and call dropping probability for handoff requests. Numerical illustrations are provided with the help of Successive Overrelaxation Method (SOR). In order to improve the performance of base station, the trade off between number of services channel and QoS of base station must be considered.

**Keywords:** Ad Hoc networks, Cellular architecture, Relaying, Markovian model, Integration, Blocking probability, Queueing system modeling.

## Introduction

Mobile communications have achieved rapid growth in recent years and the further advancement is expected to realize the future ubiquitous society. However, since the bandwidth is limited, it is very important to consider how to use the limited resources efficiently. Recently, the demand for wireless communications has grown tremendously and a lot of fundamental challenges and issues on wireless networks and mobile computing have been identified such as handover and call admission, fixed and dynamic channel assignment, data management, routing in wireless ad hoc networks, etc. As the demand of seamless communications is growing and the number of wireless users is increasing, effective call handling is becoming more and more important to utilize scarce radio resources more efficiently. In order to support dynamically arriving and departing calls effectively, size and hierarchy of cells, partitioned areas to handle wireless terminals, have to be carefully designed to maximize coverage area and to support user calls.

Ad hoc network systems are self organized, self managing, flexible and the multi hop communication in ad hoc networks leads to extending the coverage of existing wireless access technologies.

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**AQUATIC INSECT FAUNA AND DIVERSITY IN RURAL FRESH WATER  
LAKE SINA AT NIMGON GANGARDA DISTRICT AHMEDNAGAR  
(M.S) INDIA**

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*Research Paper - Zoology*

**ABSTRACT**

*About seventy one percent of water surfaces covered with water. The water spread area in India is about 4.5 million hectares. The major habitats in fresh water include the lotic bodies (Rivers and streams), lentic bodies (Ponds and lakes) ground water zones and of ecotonal water bodies where aquatic habitats meet. (E.g. wet lands, marshes and estuaries) (Palmer et. al. 1997) Manmade lakes and reservoirs are becoming very important water resources throughout the world because of the primary concern of man were thought to be for meeting his basic food requirements. The fresh water aquatic insects inhabit reservoir, streams, and lakes reservoirs. The insects are the most diversified group and plays and major role in lentic as well as lotic food chain of fishes, other animals such as birds. Insects are also being the indicators of human interference and water pollution of the water bodies.*

*The present investigation was assessed during July 2014 to May 2015. The five sampling sites were selected for the sampling of water with aquatic insect nets of various sizes. Total 691 aquatic insects were collected during the study time belongs to 5 orders and 14 families.*



## Chemistry

# Electrochemical Behaviour & Voltammetric Determination of a Manganese (II) Complex at a Carbon Paste Electrode

✉ Koinkar Kishore Nabaji \*

**Abstract**

Techniques such as cyclic voltammetry (CV) and differential pulse voltammetry (DPV) are widely used in order to understand the redox behaviour of metal complexes. On the other hand, adsorptive stripping voltammetry (AdSV) is a stripping electro analytical technique, 20 where the deposition of the analyte is accomplished by a physical or chemical interaction with the electrode surface. Once sufficient deposition of the analyte is achieved, the potential of the working electrode is swept to strip the analyte from the electrochemical effects. Investigation of the electrochemical behavior using cyclic voltammetry and detection of  $[Mn^{2+}(thiophenyl-2-carboxylic\ acid)_2(triethanolamine)]$  with adsorptive stripping differential pulse voltammetry. The electrochemical behavior of a manganese (II) complex  $[Mn^{2+}(thiophenyl-2-carboxylic\ acid)_2(triethanolamine)]$  (A) was investigated using cyclic and differential pulse voltammetry in an acetate buffer of pH 4.6 at a carbon paste electrode. Further, an oxidation-reduction mechanism was proposed. Meanwhile, an adsorptive stripping differential pulse voltammetric method was developed for the determination of manganese (II) complex.

**Keywords:** Mn (II) Complex, Cyclic Voltammetry, Differential Pulse Voltammetry, Carbon paste Electrode.

**Introduction**

Manganese is a key cofactor for a broad range of metalloenzymes, including oxidases and dehydrogenases, deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) polymerases, kinases, decarboxylases, and sugar transferases. Its compounds are important in several biological systems involving an electron transfer reaction, such as reactions involving photosystem II (PSII) and superoxide dismutase (SOD).

A few manganese complexes have been reported to show anti reactive oxygen species (ROS) activity, while Mn (II) have a redox potential that is between the redox potentials corresponding to the reduction and oxidation of the superoxide radical (200–500 mV vs normal hydrogen electrode [NHE]). Therefore, the electrochemical properties of manganese compounds are in direct relation with some of the most significant biological procedures in nature and could be very helpful to clarify the mechanism of these procedures. Furthermore, manganese complexes could have toxic effects or therapeutical properties.

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# INDO ASIAN RESEARCH REPORTER

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Dr. BALAJI KAMBLE



7

TO CONTROL WILT DISEASE OF BRINJAL BY USING BIOLOGICAL  
TREATMENT CAUSED BY FUSARIUM OXYSPORUM AS AN FUNGAL  
ANTAGONISTS

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ABSTRACT

Wilt is an important disease of brinjal crop causing significant reduction in yield. In present study the antagonistic fungal disease was controlled by using different biological treatments. Vegetable crops are affected by wilt, such as fungal pests, *Fusarium oxysporum* etc. Application of different treatment which are easily available for controlling plant diseases are non-pollutive, cost effective, non-hazardous and donot disturb ecological balance. Therefore, present study was undertaken to evaluate the role of biological control agents such as, *Trichoderma viride*, *T. harzianum*, *Glomus mosseae* and *G. fasciculatum* on *Fusarium oxysporum* on brinjal.

**Key words:** Biocontrol, *Fusarium oxysporum*, antagonist

**Introduction :**

The vegetables constitute an important constituent of our diet and are vital sources of several nutrients such as carbohydrates, vitamins and minerals. The fungal pests, such as *Fusarium* caused wilting of several vegetables

and other plants (Edwards, 1960; Prasad *et al.*, 1952; Chattopadhyay and Battacharaya, 1968; Davis *et al.*, 1979). They also caused severe loss to these vegetables and therefore warrants a careful control. Several methods used for the control of fungal pathogens are: physical, chemical, cultural and biological methods. These methods have either one or other limitations but biological methods in





SPECTROPHOTOMETRIC STUDIES ON BINARY SYSTEMS OF TPM DYE AND SURFACTANTS

Suparna Deshmukh\*

S. K. Gandhi College, Kada

INFO

ABSTRACT

7  
m 19<sup>th</sup>  
25<sup>th</sup> September, 2017  
October, 2017

The absorption spectra of Chrome Azurol S, triphenylmethane dye, are studied in the presence as well as in the absence of cationic surfactants; cetyl trimethyl ammonium bromide and sodium lauryl sulphate. Dissociation constant has been evaluated both in the presence and absence of surfactants. Decrease in the values of dissociation constant, pK values in the presence of surfactants is observed which indicated formation of water soluble, stable, dye-surfactant complex. Composition of stable dye-surfactant complex is determined and effect of foreign ions such as Chlorides i.e NaCl, KCl, NH<sub>4</sub>Cl, the nitrates i.e KNO<sub>3</sub>, NaNO<sub>3</sub>, NH<sub>4</sub>NO<sub>3</sub> and sulphates i.e K<sub>2</sub>SO<sub>4</sub>, Na<sub>2</sub>SO<sub>4</sub> and (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> has been studied in detail. It is found out that the Binary submicellar aggregates can be proposed as the active species in ternary complex formation with metal ions and hence can be termed as modified reagents.

Surfactants, Binary

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Various surface active agents and many dyes have been studied for contribution fundamental properties of surface active in applications. Subsequent developments addition of detergent solution to a organic dye solution forms a new modified dye: surfactant complex. These modified determination metals in solution as they s. It is found out that when metal ion o these modified species it resulted in red complexes with much greater molar nsitivity too. This increased sensitization of metal ions with these dye- surfactant most advantageous for analysis.

Involved in surfactant behavior is the ionic units to form colloidal aggregates micelles. Micelles are formed in surfactant concentration or within narrow range of concentrations micelle concentration. The CMC is inversely proportional to surface activity(1) The selection of surfactant is done on the basis of Sign Rule (2). In accordance with the Sign rule, the surfactant is observed for the interaction between an anionic dye while CTAB is a cationic surfactant and Harkins (4) developed a method for the selection of CMC on the postulate that the surfactants

and dye interact to form a complex which is adsorbed or absorbed by the micelles as it is formed upon the addition of more surfactant. This leads to the spectral shift of dye solution. Surfactants used were found to increase the color contrast intensity, selectivity, and sensitivity of the spectrophotometric determinations. With this aim, present studies have been carried out for studying complexation of Chrome Azurol- S with cationic, namely, Cetyl trimethyl ammonium bromide. Formation of modified species at different pH ranging from pH1.0 to pH12, their dissociation constants, stability, and interference of various ions are studied in detail. There is a considerable amount of data available as studied by Berzin T, *et al*; Mukerjee P, *et al*; and Underwood A.L., *et al*; for micellar systems which indicates that micellar system do indeed shift pK values. Zade, A.B., and Munshi. K.N, (5) has found out that the solubilisation in cationic micelles causes the pK value of organic dyes to shift in opposite direction from solubilisation in anionic micelles. The ionic, submicellar, and micellar phenomenon of substituted triphenylmethane dyes mainly Chrome azurol S, Eriochrome azurol B, Eriochrome Cyanine R, and Pyrocatechol Violet with cationic surfactants has been examined by Jarosz (6). The effect of TPM dyes on the hydrophobic properties of cationic surfactants on the absorption spectra and the dissociation constants of dyes, and CMC was studied. Binary submicellar aggregate is proposed as the active species in ternary complex formation with metal ions. Surfactants used in the present studies were found to decrease dissociation constants of the dye, increase the color contrast intensity, selectivity, and sensitivity of the spectrophotometric determinations. With this aim, present studies have been carried out for studying complexation of

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# COMPARITIVE STUDY OF WATER QUALITY ASSESSMENT OF HARVESTED RAIN WATER & NON HARVESTED GROUND WATER.

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S. K. C. College,  
Kada, Dist. Beed.

**ABSTRACT :** All over the country Rain Water Harvesting has been made mandatory since 1996 as over extraction of ground water and wastage of rainwater have led to severe water crisis. Hydrogeologists says that, it makes ecological and financial sense to harvest rain water or roof top water for short term use and long term improvement of the water table. It is in Delhi, Andhra Pradesh, Chennai, Kerala, Maharashtra, Gujarat and Madhya Pradesh where its implementation has become successful in water conservation. Kada is a village which lies in district Beed of Maharashtra, and is famously known as a strong drought prone area. It is in this concern, present studies have undertaken for conservation of natural rain water and its storage in surface water or in tubewells. By constructing Rain Water Harvesting systems at five different locations in Kada, which includes schools and public places. Researcher has found successful rise in water levels of borewells and people are enjoying the results. The researcher tried out to find the water quality and its purity of harvested rain water as well as non harvested ground water. Researcher assessed potability as per IS 15200 for drinking water quality assessment, and comparative studies have shown that water gets more purified naturally when rain water is harvested.

**KEYWORDS :** Water scarcity, Rain water harvesting, Bacteriological analysis E. Coli, Thermotolerant bacteria.

## INTRODUCTION:

Nature has blessed earth generously with the gift of water. About 3/4<sup>th</sup> part of the earth is covered with water. Out of total availability of water for mankind, only a meager 1% is available for drinking, irrigation and industrial purposes. 97% is found as sea and salty water, while 2% is entrapped by the polar ice caps. Due to overpopulation, there is always overexploitation of water available for drinking and irrigational or industrial purposes. Water scarcity has been prime concern at present as water is the main source of livelihood. Over past 100 years, the consumption of fresh water has increased by more than 500%, resulting in fresh water scarcity. It is estimated that by 2025 two third of population will live in water stressed areas. Rain is natural source of water which is known to all of us but most have ignored it for years together. Importance of rain water harvesting has gained momentum because of depletion in the groundwater levels on account of rapid urbanization, industrialization & massive population growth.

The Water Act, (1974), for prevention and control of Pollution, was put forwarded which was amended later in 1981 and 1986. This Act, centers round the effective prevention, control, and abatement of water pollution in the country. Rapid industrialization and urbanization have resulted in degradation of the environment which is the cause of several diseases, mental tensions, and other miseries. Therefore, efforts should be made to ensure that common man gets sufficient pure water, pure air, and pure food. Seven billion people on the earth today are dependent on ground water for irrigation, industrial, environmental and domestic applications. If some efficient, scientific and cost effective ways and means are provided to recharge our aquifers by rain water. Rain water harvesting is a unique of collection and storage of rain water into natural reservoirs or tanks, or the infiltration of surface water into surface aquifers (before it is lost as surface runoff). One of the most efficient method of rain water harvesting is Roof Top

Water Harvesting. Implementing this fact, it has been decided to procure Rain Water Harvesting system at some public places in Kada town, in district Beed of Maharashtra state in India.

## RATIONALE BEHIND CHOOSING THE PROBLEM:

Kada is a village in Ashti Tahsil of Beed district of Maharashtra State, in India This region is known to be adversely drought prone area. The total population of the village is about 15,000, and there are near about 3000 houses. It belongs to Marathwada region and also Aurangabad division. It is located 83 Km towards west from district head quarters of Beed and 6 Km from Ashti, as well as 274 Km from State capital, Mumbai. Its height from sea level is 552 meters above sea level. There is a Lignitus type of rock, all over in the town, which is a Primary rock, and thus water does not get percolated properly. Total rainfall per annum in the village and vicinity is very less and is near about 500-600 mm only. The main source of water supply in the village is Bore-well or Tube-well which are about 400 to 700 feet in depth. Among these more than 80% of Bore-wells gets dried out completely during the months of November or December only. Villagers have to pay Rs. 5 to Rs. 7 per five litres of water during the period of January to June. At maximum places water tankers supplies this water. Looking towards the severity of problem of water scarcity in village KADA, situated in District Beed of Maharashtra State, INDIA. Rain water harvesting will improve water supply, food production and ultimately food security. Water insecure households or individuals in rural areas will be benefited the most from Rain Water Harvesting system. Since rainwater harvesting leads to water supply which leads to food security, this will greatly contribute to income generation. If 80% of total rain water can be collected then 40,000 litres of rain water is available for collection. Depending on the size of the rain water collecting tank, & the distribution of rainfall it is easy to collect all this 40,000 litres



RESEARCH ARTICLE

COMPLEXATION, ACCURACY, PRECISION OF CAS, PCV WITH CTAB IN HEAVY METAL IONS, DETERMINATION

\*Dr (Mrs.) Suparna Deshmukh

Department of Chemistry, Gandhi College, Kada

ABSTRACT

Study of coordination compounds of heavy metal ions is of special interest since past due to their growing applications in science and technology. Complexation behavior of Triphenyl-Methane Dyes viz. Chrome Azurol-S, CAS; and Pyrocatechol Violet PCV, in the presence and absence of surfactant Cetyl Trimethyl Ammonium Bromide has been found to form stable water soluble pink colored complexes. CTAB have shown to increase sensitivity of the color reactions of these complexes with greater solubility and higher stability. The addition of some heavy metal ions such as Cu(II), Ni(II), Cd(II), Hg(II), and Pb(II), to these sensitized modified reagents resulted in the formation of intense, stable colored complexes. The composition of the complexes of metal ions under study remains same in both dyes CAS and PCV as 1:1, both in the absence and presence of CTAB except in case of Cd(II). In case of Cd(II) with CAS it is 1:1 and it changes as 1:2 in presence of CTAB. Dissociation constants pK values of dye-surfactant modified reagents has been calculated. Various analytical parameters including rate of color formation, effect of temperature and stability of color formation, range of adherence to Beers Law, Molar Extinction constants, Sensitivity, were studied for all systems in absence as well as in presence of CTAB. A simple, rapid, highly sensitized stable method has been proposed. Precision and Accuracy of the method suggested for microdetermination of metal ions was determined which shown suggested methods are both precise and accurate.

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July, 2017

ium bromide,

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s.) Suparna Deshmukh, 2017. "Studies on complexation, accuracy, precision of CAS, PCV with CTAB in heavy metal ions. International Journal of Current Research, 9, (07), 54595-54599.

formation of colored complexes has been used for the spectrophotometric estimation of these last few decades. Reaction of these dyes with 4f and 5f metal ions have been a subject of study by several workers (Jarosz, 1988; 979; Chernova *et al.*, 1979; Cerkova, 1982; 68). The systematic design of surfactants and their interactions leading to the sensitized method for metal ion determination could obviously be an accurate model of detail chemistry involved (Jarosz, 1988; Vekhande and Munshi, 1973; 61). Complexation of Cu(II), Fe (II) & Al (III) with Chrome Azurol S in the presence of non ionic surfactants (Chernova, 1977) The present investigation provides a detail study of the interaction of Cetyl Trimethyl Aminonium Bromide with the dye Chrome Azurol S (CAS) and Pyrocatechol Violet (PCV). The dye surfactant complexes were used to study complexation reactions of Cd(II) Hg(II), and Pb(II), and compared with

the complexation reaction of these metal ions with Chrome Azurol S and Pyrocatechol Violet in absence of detergents.

MATERIALS AND METHODS

The absorption measurements were done on UV Shimadzu - UV 240 Spectrophotometer. Distilled water blanks were used for pH measurements Elico pH meter LI-10 with glass calomel electrode system was used after standardization. All the reagents used were of BDH Anala R grade purity. The surfactant Cetyl trimethyl ammonium bromide (CTAB) was prepared in 20% aqueous methanol in double distilled water and were standardized by usual procedures. The dye solution was also prepared in double distilled water by dissolving its purified samples and the standard solutions of heavy metals under study were prepared by dissolving analytical grade metal salts in 5% HNO<sub>3</sub>.

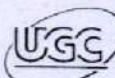
Procedure

Preparation of mixtures, measurements of absorbance, adjustment of pH etc. were carried out at room temperature. In all the experiments CTAB solution was added to the reagent solutions which was kept for at least 20 minutes for maximum

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## STUDIES ON BACTERIOLOGICAL ANALYSIS, AND FLUORIDE CONTENT IN HARVESTED ROOF TOP WATER: A COMPARITIVE STUDY

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Kada, Dist. Beed.

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### ABSTRACT

Rain Water Harvesting is a very effective remedy over water crisis. It is in Delhi, Andhra Pradesh, Chennai, Kerala, Maharashtra, Gujarat and Madhya Pradesh where its implementation has become successful in water conservation and water shed management. Kada is a village which lies in district Beed of Maharashtra, and is famously known as a strong drought prone area. It is in this concern, present studies have undertaken for conservation of natural rain water and its storage in surface water or in tubewells. By constructing Rain Water Harvesting systems at five different locations in Kada, which includes schools and public places. Researcher has found successful rise in water levels of borewells and people are enjoying the results. The researcher tried out to find the water quality and its purity of harvested rain water as well as non harvested ground water. Researcher assessed potability as per IS 15200 for drinking water quality assessment, and comparative studies have shown that water gets more purified naturally when rain water is harvested. Studies on bacteriological analysis and on iron content as well as fluoride contents were carried out. Fluoride and Iron contents are within permissible limits.

**KEYWORDS :** Rain water harvesting, E. Coli, Thermotolerant bacteria, Fluoride, Iron

### INTRODUCTION :

All over the country Rain Water Harvesting has been made mandatory since 1996 as over extraction of ground water and wastage of rainwater have led to severe water crisis. Hydrogeologists says that, it makes ecological and financial sense to harvest rain water or roof top water, for short term use and long term improvement of the water table. Nature has blessed earth generously with the gift of water. About 3/4th part of the earth is covered with water. Out of total availability of water for mankind, only a meager 1% is available for drinking, irrigation and industrial purposes. 97% is found as sea and salty water, while 2% is entrapped by the polar ice caps. Due to overpopulation, there is always overexploitation of water available for drinking and irrigational or industrial purposes. Water scarcity has been prime concern at present as water is the main source of livelihood. Over past 100 years, the consumption of fresh water has increased by more than 500%, resulting in fresh water scarcity. It is estimated that by 2025 two third of population will live in water stressed areas. Rain is natural source of water which is known to all of us but most have ignored it for years together. Importance of rain water harvesting has gained momentum because of depletion in the groundwater levels on account of rapid urbanization, industrialization & massive population growth.

The Water Act, (1974), for prevention and control of Pollution, was put forwarded which was amended later in 1981 and 1986. This Act, centers round the effective prevention, control, and abatement of water pollution in the country. Rapid industrialization and urbanization have resulted in degradation of the environment which is the cause of several diseases, mental tensions, and other miseries. Therefore, efforts should be made to ensure that common man



## हुंडा पध्दती : समस्या आणि प्रतिबंधात्मक उपाययोजना - एक अभ्यास

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डॉ. राधाकृष्ण ल.

इतिहास विभाग

गांधी महाविद्यालय, कुडा

प्रस्तावना :-

प्रतिष्ठीतांसाठी प्रतिष्ठेचा समजला जाणारा हुंडा आज सर्वसामान्यांसमोरील सर्वात मोठी समस्या ठरत आहे. समाजात हुंडा प्रथमे दिवसेंदिवस व्रस्त होत चालले आहे. यावर उपाययोजना करणे अत्यंत आवश्यक असल्याची मते मांडता येतात. कारण सरसावले आहेत. मात्र कृती करतांना प्रत्येक जण 'मी सोडून' अशी भावना बाळगतो. त्यामुळे समाजात आज हुंडा प्रथमे दिवसेंदिवस असली तरी त्यातून खोटी प्रतिष्ठा शोधण्याचा प्रयत्न केला जातो. आधुनिककाळात सर्व समस्यांवर समाजात नसूनच या व अशा अनेक माध्यमातून अनेक कुप्रथा-परंपरांवर टिका केली जाते. त्याचे दुष्परिणाम सामोरे येतात. परंतु आधुनिक काळात शिक्षणाचा मोठा प्रसार होऊनही हुंडा बळीची संख्या दिवसेंदिवस वाढतच येत आहे.

या निबंधाचे उद्देश :-

- १) हुंडा पध्दतीचे स्वरूप स्पष्ट करणे.
- २) हुंडा पध्दतीच्या समस्यांचे विश्लेषण करणे.
- ३) हुंडा प्रतिबंधात्मक उपाययोजनांचा आढावा घेणे.

हुंडा पध्दती आज समाजासमोरील प्रमुख समस्या बनत चालली आहे. या समस्येचे भारतातील स्वरूप गंभीरपणे त्याचा राज्यनिहाय आढावा पुढीलप्रमाणे स्पष्ट करण्यात आला आहे.

हुंडा पध्दती :-

भारतातील सर्वच राज्यांमध्ये हुंडा पध्दतीची समस्या गंभीर बनत चालली आहे. भारतातील सर्वच प्रकारच्या समाजात हुंडा पध्दतीच्या माध्यमातून व्रस्त आहे. समाजातील प्रमुख घटक असलेल्या महिला वर्गाला या समस्येचा सामना करावा लागतो. अनेक महिलांचा या पध्दतीमुळे नाहक बळी जात आहे. हुंडा पध्दती किती तिव्र समस्या आहे, त्याचा प्रत्यक्ष आकडेवारीवरून दिसून येतो.

तक्ता क्र.१

राज्यनिहाय हुंडा बळीची संख्या

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RESEARCH ARTICLE

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## STUDIES ON DETERMINATION OF PURITY OF HARVESTED RAIN WATER & NON HARVESTED GROUND WATER: BACTERIOLOGICAL ASSAY

**Dr. Suparna Deshmukh**

S. K. Gandhi College, Kada, Dist. Beed

### ABSTRACT

All over the country Rain Water Harvesting has been made mandatory since 1996 as over extraction of ground water and wastage of rainwater have led to severe water crisis. Hydrogeologists says that, it makes ecological and financial sense to harvest rain water or roof top water, for short term use and long term improvement of the water table. It is in Delhi, Andhra Pradesh, Chennai, Kerala, Maharashtra, Gujarat and Madhya Pradesh where its implementation has become successful in water conservation. Kada is a village which lies in district Beed of Maharashtra, and is famously known as a strong drought prone area. It is in this concern, present studies have undertaken for conservation of natural rain water and its storage in surface water or in tubewells. By constructing Rain Water Harvesting systems at five different locations in Kada, which includes schools and public places. Researcher has found successful rise in water levels of borewells and people are enjoying the results. The researcher tried out to find the water quality and its purity of harvested rain water as well as non harvested ground water. Researcher assessed potability as per IS 15200 for drinking water quality assessment, and comparative studies have shown that water gets more purified naturally when rain water is harvested.

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Suparna Deshmukh. 2017. "Media prejudice against women: impact on gender narrative", International Journal of Development Research.

### INTRODUCTION

God has blessed earth generously with the gift of water. About 71% of the earth is covered with water. Out of total water on earth, only a meager 1% is available for drinking, irrigation and industrial purposes. 97% of water is salty water, while 2% is entrapped by the ice. Due to overpopulation, there is always shortage of water available for drinking and industrial purposes. Water scarcity has been a major problem present as water is the main source of life. In the past 100 years, the consumption of fresh water has increased by more than 500%, resulting in fresh water scarcity. It is estimated that by 2025 two third of the world will live in water stressed areas. Rain is natural resource which is known to all of us but most have neglected it for years together. Importance of rain water has gained momentum because of depletion in the

groundwater levels on account of rapid urbanization, industrialization & massive population growth. The Water Act, (1974), for prevention and control of Pollution, was put forwarded which was amended later in 1981 and 1986. This Act, centers round the effective prevention, control, and abatement of water pollution in the country. Rapid industrialization and urbanization have resulted in degradation of the environment which is the cause of several diseases, mental tensions, and other miseries. Therefore, efforts should be made to ensure that common man gets sufficient pure water, pure air, and pure food. Seven billion people on the earth today are dependent on ground water for irrigation, industrial, environmental and domestic applications. If some efficient, scientific and cost effective ways and means are provided to people then it will be helpful to harvest, conserve, reuse and recharge our aquifers by rain water. Rain water harvesting is a technique of collection and storage of rain water into natural reservoirs or tanks, or the infiltration of





## “सुरज का सातवाँ घोड़ा उपन्यास की प्रासंगिकता”

डॉ. चौधरी के. बी.

हिंदी विभाग

एस.के. गांधी महाविद्यालय

कडा ता.आष्टी जि. बीड

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सुरज का सातवाँ घोड़ा यह उपन्यास धर्मवीर भारतीने स्वतंत्रता प्राप्ति के बाद में लिखा हुआ यह उपन्यास है। इस उपन्यास लेखक ने निम्न और मध्य वर्ग का वर्णन किया है। जो की सामाजिक रूढ़ी परम्परा में जकड़ गये थे, आर्थिकता का संकट उनके सर पर मंडरा रहा था। सुरज का सातवाँ घोड़ा यह उपन्यास में भारतीजीने उपन्यास के माध्यम से समाज को जागृत करने का काम किया है। इस उपन्यास में एक कहानी में अनेक कहानियाँ न होकर अनेक कहानियों में एक कहानी है। उपन्यास में झूठी नैतिकता का वर्णन धार्मिक संघर्ष को भी देखने को मिलता है। जो की निराशा की और बढ़ाता है। उसी दुःख में भावी जीवन के सपनों को दे सजाते हैं और आपे सपनों का निर्माण वह कराते दिखाई दिरें हैं।

सुरज का सातवाँ घोड़ा उपन्यास का प्रमुख पात्र माणिक मुल्ला है। पात्र के माध्यम से समाज को जोड़ने का काम किया है। माणिक मुल्ला एक प्रेम कहानी जोड़ने का प्रयास करता है। माणिक ने सामाजिक विकृती उसे जोड़ने का प्रयास किया है। माणिक मुल्ला प्रेम के संबंधी अपने अनुभव को व्यक्त करता है। उपन्यास के नियम आर्थिक संघटन पर आधारित है। सामाजिक नैतिकता वर्गसंघर्ष की भावना है। उपन्यास में व्यक्ती के दुःख दर्द को चित्रित करने का काम किया है। भ्रष्ट नैतिकता और



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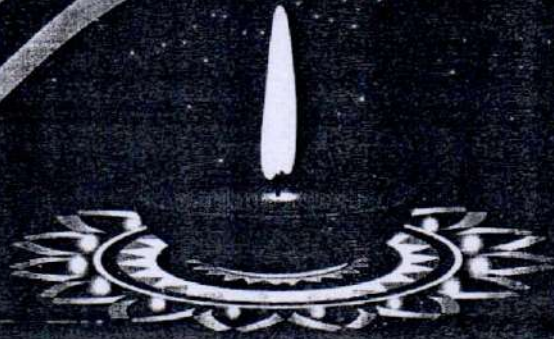
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**STUDIES ON INTERACTION OF TPM DYE, CAS AND  
 CATIONIC SURFACTANT, CETYL TRIMETHYL  
 AMMONIUM BROMIDE**

**Dr. Mrs. Suparna Deshmukh**

S. K. Gandhi College, Kada Email : [suparna.deshmukh@gmail.com](mailto:suparna.deshmukh@gmail.com)

**Abstract**

The absorption spectra of Chrome Azurol S, a triphenylmethane dye, is studied in the presence as well as in the absence of cationic surfactant, cetyl trimethyl ammonium bromide. Dissociation constant has been evaluated both in the presence and absence of surfactants. Decrease in the values of dissociation constant,  $pK$  values in the presence of surfactants is observed which indicated formation of water soluble, stable dye-surfactant complex. Composition of stable dye-surfactant complex is determined and effect of foreign ions such as Chlorides i.e. NaCl, KCl,  $NH_4Cl$ ; the nitrates i.e.  $KNO_3$ ,  $NaNO_3$ ,  $NH_4NO_3$  and sulphates i.e.  $K_2SO_4$ ,  $Na_2SO_4$  and  $(NH_4)_2SO_4$  has been studied in detail.

**INTRODUCTION:**

Subsequent developments showed that the addition of detergent solution to a triphenylmethane organic dye solution forms a new modified reagent species as dye: surfactant complex. These modified species are used for determination metals in solution as they can form complexes. It is found out that when metal ion solution is added to these modified species it resulted in soluble, highly colored complexes with much greater molar absorptivities and sensitivity too. This increased sensitization of color reactions of metal ions with these dye-surfactant modified species is most advantageous for analysis.

The basic principle involved in surfactant behavior is the clustering of monomeric units to form colloidal aggregates also called as micelles. Micelles are formed in surfactant solutions at or above or within narrow range of concentrations called as critical micelle concentration. The CMC is inversely proportional to the surface activity (1) The selection of appropriate surfactant is done on the basis of Sign Rule proposed by Hartley (2). In accordance with the Sign rule, the effect has been observed for the interaction between an indicator with several charged point and oppositely charged micelles (3). CAS is anionic dye while CTAB is a cationic surfactant. Corrin and Harkins (4) developed a method for the determination of CMC on the postulate that the surfactants and dye interact to form a complex which is adsorbed or absorbed by the micelles as it is formed upon the addition of more surfactant. This leads to the spectral shift of dye solution. Surfactants used were found to increase the color contrast intensity, selectivity, and sensitivity of the spectrophotometric determinations. With this aim, present studies have been carried out for studying complexation of Chrome Azurol-S with cationic, namely, Cetyl



RESEARCH ARTICLE

SUDARSHAN KRIYA AS REMEDIAL TECHNIQUE FOR DEPRESSION: A REVIEW STUDY

\*Dr. Suparna R. Deshmukh

S. K. Gandhi College, Kada, Dist. Beed, India

ABSTRACT

Large number of studies have been carried out for relief on Depression since last few decades. Sudarshan Kriya and its accompanying breathing techniques were found to give an extreme relief from depression to the persons who practiced it regularly. Many studies have demonstrated about 67-73% success rate in relief from depression, regardless of the severity of depression. These results are experienced rapidly, often within 3-4 weeks. It was observed that, there was rapid uniform relief from depression with SKY practices, unlike any conventional treatments. The results were found to be independent upon time period for how long a person was being suffering from clinical depression or the degree to which brain dysfunctioning was found in the depressed individual. Sudarshan Kriya is a natural rhythmic breathing technique which releases stress, tensions, and depression and also brings an effective control on emotions simultaneously by minimizing stress hormone, Cortisol level in blood. Present study focuses on effects of Sudarshan Kriya on Depression.

Dr. Suparna R. Deshmukh. This is an open access article distributed under the Creative Commons Attribution License, which permits distribution, and reproduction in any medium, provided the original work is properly cited.

Suparna R. Deshmukh, 2017. "Sudarshan Kriya As Remedial Technique for Depression : A Review Study", International Journal of Current Research, 9(10), 60020-60023.

INTRODUCTION

Stress are being pulled out from every cell of our body from childhood. A process called Sudarshan Kriya, developed by the spiritual leader Sri Sri Ravi Shankar, is a breathing technique which releases stress, tensions, and also brings an effective control on emotions. It is the only tool which helps in directly releasing tensions through rhythmic breathing. Rhythmic breathing is a unique method for balancing the autonomic nervous system and influencing psychological and stress-related issues. The word Sudarshan means proper vision and a purifying action. Through the action of our eyes, we get a proper vision of who we really are. There is a natural rhythm, like seasons come and go in time. Like there is a rhythm in human body, in thoughts, in emotions, and in our being too. Sudarshan Kriya helps in restoring the natural rhythm of a Being and through the rhythms of the seven levels of existence of human being gets harmonising all systems of the human body. The main effect caused by SK, through which depression is being spreading and increasing day and in developed countries like Europe, the percentage is near about 40-45% which is becoming alarming to human health. Sudarshan

Kriya and its accompanying practices (SK&P), are time-honored stress management/health promotion techniques whose health benefits are being validated by modern medical science. Various studies have documented great and significant relief from depression in individual persons, who practiced Sudarshan Kriya regularly (1-6). These studies have demonstrated more than 70% success rate in relief from depression that too within 3-4 weeks. (7,8). There is uniform rapid relief from depression with SKY practices regardless of period of suffering of patient or degree to which dysfunctioning of brain occurs.

Founder Sri Sri Ravi Shankar states that, during the process infusion of maximum amount of oxygen to every cell is observed, which helps in the release of neuropeptides that regularize Abnormal Brain Wave patterns in patients suffering from neural disorders. As it directly effects in better metabolism, increased amounts of oxygen allows the release of emotions which are creating burden and stress. The mind-body intervention seeks to distress the mind and accordingly eliminate the ailments (9). Medical science is nowadays validating many of ancient health practices like Yoga, Pranayaam as well as practices from traditional cultures worldwide. SKY is a novel and ultimate practice that is undergoing extensive research. It has been reported to be quite effective for treatments in all stress related ailments, anxiety, depression, and even in cardiac treatments. It has also been reported as an effective tool for rehabilitation of criminal offenders. The main aim of the present study is thus to study the effects of SKY on Depression as a supplementary remedy.

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S. K. Gandhi College, Kada, Dist. Beed, India





# The investigation of potassium tetra thiourea chloride on linear-nonlinear optical, electrical and mechanical properties of KDP crystal for NLO applications

Y. B. Rasal, R. N. Shaikh, M. D. Shirsat, S. Kalainathan & S. S. Hussaini

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Water Quality

# Quality Assessment of Drinking Water in KADA

Dr. Suparna Deshmukh<sup>1</sup>

<sup>1</sup> S. K. Gandhi College, Kada, Dist. Beed.

*is a village which lies in district Beed of Maharashtra State in India, and is well known as a strongly drought  
e present studies are carried out to find the water quality and purity of drinking water. Water samples were  
ysic-chemical analysis, for bacteriological analysis and for demand analysis. The different physicochemical  
ied are pH, Turbidity, Chlorides, Nitrites, Sulphates, TDS, Hardness, Alkalinity, and Fluoride. For studying  
is Dissolved Oxygen Content, Biochemical Oxygen Content, and Chemical Oxygen content is determined. Purity  
f water is also assessed by determining bacteriological analysis of drinking water in Kada. Researcher assessed  
IS 10500 -2012 for drinking water quality assessment  
ico-chemical analysis, Demand Analysis, Bacteriological analysis.*

## I. INTRODUCTION

is among one of the basic needs for life on earth. It is essential for survival and it is birth right of every living being  
purest possible form for drinking. It is essential for survival of all living beings from simplest herbs and  
like bacteria, viruses up to complex systems of human body(1-3). As per previous researches, more than one billion  
the world do not have ready access to an adequate and safe water supply and more than 800 million of those live  
areas. In India, ground water is being used as raw water for 85% public water supply. According to world health  
% of the population is always prone to loss of their lives at cost of different water-borne disease. Water contaminants  
in drinking water are pathogenic microorganisms, physicochemical contents; metals, pesticides oil and grease etc.  
as to human health. The physico-chemical characteristics of the aqueous phase have direct influence on the types  
of aquatic biota as well as on the health of the human being. With this pace the present study is carried out for  
indicator parameters, in the ground water bodies of Kada Town. Demand analysis has also been studied along with  
analysis. It is observed that by environmental measurement systems that, the amount of dissolved oxygen at 100 %  
level at 20 C is 9.03mg/L. Dissolved oxygen in natural water resources is an important source of oxygen supply to  
including aquatic life. But its amount should be adequate enough and should not exceed permissible limits laid  
WHO, as more amount of oxygen content present causes harmful effects. For instance, higher concentration of  
levels, speeds up corrosion of water pipes. Hence it is very important to maintain proper levels of dissolved  
ing water. As it is DO, chemical oxygen demand (COD) is the amount of oxygen required for chemical oxidation of  
load present in water while biological oxygen demand BOD is the amount of oxygen required by the biological  
Demand Analysis signifies the total organic pollution load if present in drinking water.

cludes determination of demand of oxygen to oxidize organic matter present in water bodies as pollutant.  
Ashti Tahsil of Beed district of Maharashtra State, in India This region is known to be adversely drought prone  
population of the village is about 15,000, and there are near about 3000 houses.. It belongs to Marathwada region and  
division. It is located 83 Km towards west from district head quarters of Beed and 6 Km from Ashti, as well as 274  
Mumbai. Its height from sea level is 552 meters above sea level. There is a Lignius type of rock, all over in  
is a Primary rock, and thus water does not get percolated properly. Total rainfall per annum in the village and  
and is near about 500-600 mm only. The main source of water supply in the village is Bore-well or Tube-well  
to 700 feet in depth.



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STUDY OF FRESHWATER QUALITY OF CHOBA NIMGAON LAKE BY  
USING PHYSICO-CHEMICAL PARAMETERS

Doke R.B.

&

Katariya A.P.

Department of Chemistry,

SAJVPMS Gandhi College, Kada, Tal- Ashti, Dist - Beed (M.S.) 414202

**Abstract**

A Physico-Chemical study of freshwater collected after rainy season is carried out to assess the water quality of Choba Nimgaon lake which is located in Ashti Tehsil of Beed district of Maharashtra in year 2017. Various parameters has been studied such as Colour, Temperature, pH, Conductivity, TDS, Dissolved Oxygen, Total Alkalinity, Hardness, Ca - Hardness, Mg- Hardness, Chlorides, Nitrates and Phosphates. Samples from various part of lake are collected to increase the correctness of assessment.

**Keywords** - Physico-Chemical study, freshwater, Choba Nimgaon lake.

**Introduction**

Physico-Chemical analysis of water is interesting and important topic as it shows its effect on all living things. Water is called as life because it is a highly essential and basic thing for healthy development of living things. Water is mainly used by human being for irrigation and drinking purpose. In irrigation quality of water enhances or reduces the productivity of soil. High TDS due to the excess amount of salt or unessential minerals make the soil unproductive. Limited amount of healthy minerals in water make the soil highly productive, same thing happen with drinking water. Good and pure water is important for healthy life of human being and bad water shows its worse effect. Human being and animals are highly dependent on

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## 1975 ची आणीबाणी आणि प्रसारमाध्यमे

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एम. के. गांधी महाविद्यालय कडा ता. आष्टी

जि. बीड

सारांश :

इंदिरा गांधींनी देशावर आणीबाणी लादली, तेव्हा प्रसारमाध्यमांची खुलेआम गळचेपी करण्यात आली. सेन्सॉरशिप लागू झाली होती. आणीबाणीच्या काळात लोकशाही मूल्यांचा, मूलभूत स्वातंत्र्याचा पुरस्कार करणाऱ्या प्रसारमाध्यमांवर वेगवेगळे खटले भरण्यात आले. त्यांच्याकडून जामिन घेण्यात आला, आणीबाणीत इंदिरा गांधी यांनी कमिटेड प्रेस (राजनिष्ठ वृत्तपत्रे) कमिटेड ब्युरोक्रेसी व कमिटेड ज्युडिशरी हवी होती त्यामुळे आणीबाणीच्या काळात आणीबाणी विरोधी प्रसार करणाऱ्या वृत्तपत्रांच्या सरकारी जाहिराती बंद करणे, त्यांच्या मागे वारंवार पोलीस चौकशीचा ससेमिरा लावणे इ. प्रकार चालू राहिले. तरीही या काळात भारतभर अभिव्यक्ती स्वातंत्र्यासाठी आवाज उठत राहिले. त्यामुळेच मतांचं सर्वसामान्यांचा आक्रोश जगला समजला.

अलाहाबाद उच्च न्यायालयाचा निर्णयाने इंदिरा गांधींची 1971 ची निवडणूक अवैध ठरवल्या गेली. "सर्वोच्च न्यायालयामध्ये खटला लढण्याचा राजरोस मार्ग स्वीकारण्याऐवजी गांधींनी आणीबाणीचा चुकीचा निर्णय घेतला, यामागील कारणे म्हणजे त्यांच्या मनामध्ये असणारी असुरक्षिततेची जाणीव आणि आपल्या सहकाऱ्याबद्दलचा अविश्वास ही होती." या असुरक्षिततेच्या व अविश्वासाच्या भावनेनेच त्यांनी अंतर्गत आणीबाणी जाहीर केली. "25 जून 1975 च्या रात्रीच वृत्तपत्र कार्यालयांची वीज तोडली गेली. राजधानीवर बातम्यांच्या 'ब्लॅक आउट' लादला गेला."<sup>2</sup> आणीबाणीची बातमी गुप्त ठेवण्यावर भर देण्यात आला होता. इतकेच नव्हे तर उच्च न्यायालय देखील बंद करण्याचे षडयंत्र रचले जात होते. पण सिध्दार्थ शंकर रे यांनी यास विरोध दर्शवला. "दुसऱ्या दिवशी न्यायालय उघडी राहिली पण बहुतेक वृत्तपत्रांचा वीजपूरवठा तोडण्यात आल्याने दैनिक प्रसिध्द होवू शकली नाहीत. अनवधानान वीजपूरवठा तोडायचं राहून गेल्याने 'स्टेटसमन' व 'हिंदुस्तान टाइम्स' ही दैनिक तेवढी प्रसिध्द झाली."<sup>3</sup> सकाळी आणीबाणीचा निर्णय मंत्रिमंडळाच्या बैठकीत सांगण्यात आला, पण कोणीही केंद्रीय मंत्र्याने त्यास विरोध दर्शविला नाही. संपूर्ण अभिव्यक्ती स्वातंत्र्यच या अंतर्गत आणीबाणीने हिरावून घेतले होते. पूर्ण सेन्सॉरशिप लादण्यात आली होती. मूलभूत हक्कांवर गदा आणणारे वटहूकूम काढले जात होते. इतकेच नव्हे तर संजय गांधींनी नभोवाणीमंत्री आय. के. गुजराल यांना आकाशवाणीवरील बातम्या प्रसारीत होण्यापूर्वी मला पाहण्याची व्यवस्था करावी असा सल्ला दिला तो आय. के. गुजराल यांनी मानला नाही. त्यांचे खाते मग विद्याचरण शुक्ल यांच्याकडे हस्तांतरित करण्यात आले. "वृत्तपत्रांवर प्रसिध्दीपूर्व नियंत्रण जारी करण्यात आले. वृत्तपत्रांनी काय छपायचे आणि काय छपायचे नाही, या संबंधीचा अधिकार सरकारने आपल्याकडे घेतला. प्रत्येक वृत्तपत्रांच्या कचेरीत पोलीस इन्स्पेक्टर येवून बसू लागला आणि प्रत्येक पान त्याला दाखवल्यानंतरच छपाईयंत्राकडे जावू लागले. संपादक नामधारी झाले, कारण त्यांचा अधिकार सरकारी अधिकारी उपभोगू लागले. 'मदरलॅंड' आणि 'ऑर्गनायझर' या जनसंघाच्या नियतकालिकांचे प्रकाशन जबरदस्तीने बंद पाडण्यात आले. कारण संजय गांधी यांचे बेकायदेशीर व्यवहार उघड्यावर आणण्याच्या कार्यात या वृत्तपत्रांचा पुढाकार होता. वृत्तपत्रीय



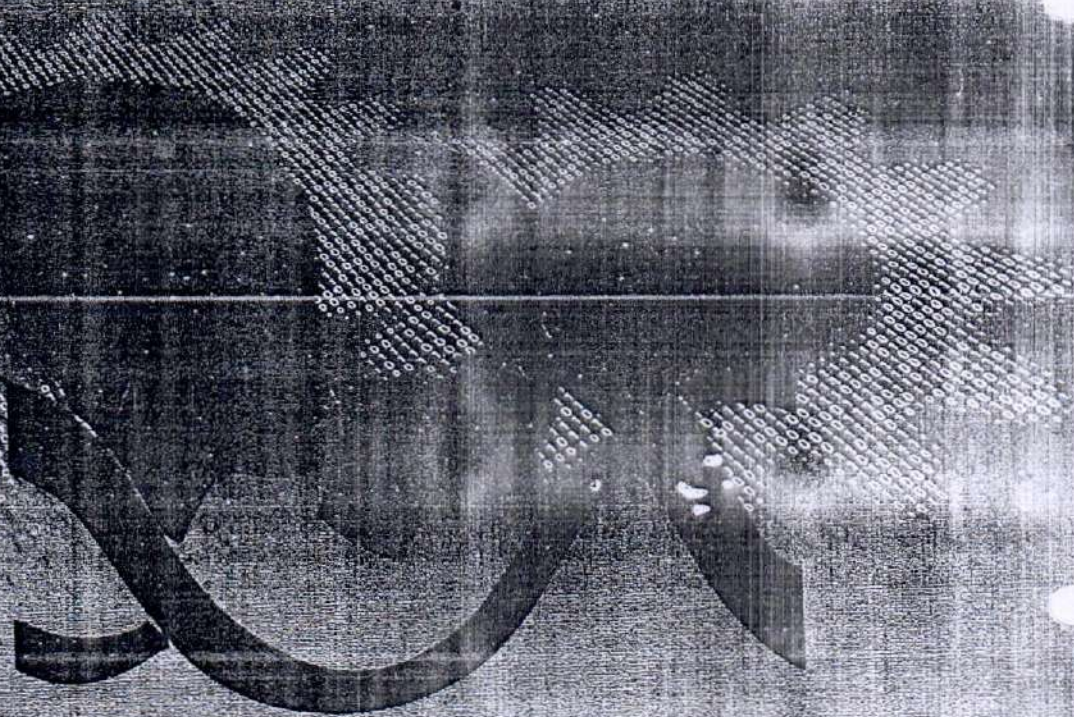


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system among to change the mind set of people in rural area to adopt cashless modes of transactions. 7. Reserve bank should change its role as developer of cashless economy rather than protector of banking institution.

**Conclusion:**

“Prime Minister Narendra Modi has repeatedly urge people in his monthly speech ‘man ki baat’ to adopt cashless modes. So that the problem of corruption and black money can be overcome and the speed of economy development can be increased. Being cashless is a dream for Indian economy. It will require about 100 years to make our economy completely cashless. It is necessary to create financial literacy among the people and create faith in their mind to adopt cashless modes of transactions. 70% of the GDP comes from urban areas. So efforts should be made to make urban areas cashless. If government can convert the urban area into cashless, it will be a huge achievement.”

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## STUDIES ON TPM DYE CHROME AZUROL-SAND NON IONIC SURFACTANT TX- 100

**Dr. Mrs. Suparna Deshmukh**  
S. K. Gandhi College, Kada

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**ABSTRACT**

Interactions between various surface active agents and many substances including dyes have been studied for contribution to the elucidation of fundamental properties of surface active agents to extend their applications. The absorption spectra of Chrome Azurol S, triphenylmethane dye, are studied in the presence as well as in the absence of non ionic surfactant, Triton X-100. The spectra is studied at different pH values to get  $\epsilon_{max}$  of CAS of study. Dissociation constant has been evaluated both in the presence and absence of surfactant. Decrease in the values of dissociation constant, pK values in the presence of surfactant is observed which indicated formation of water soluble, stable dye-surfactant complex. Composition of stable dye-surfactant complex is determined and effect of foreign ions such as Chlorides i.e NaCl, KCl, NH<sub>4</sub>Cl; the nitrates i.e KNO<sub>3</sub>, NaNO<sub>3</sub>, NH<sub>4</sub>NO<sub>3</sub> and sulphates i.e K<sub>2</sub>SO<sub>4</sub>, Na<sub>2</sub>SO<sub>4</sub> and (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> has been studied in detail. It is found out that the Binary submicellar aggregates can be proposed as the active species in ternary complex formation with metal ions and hence can be termed as modified reagents, as CAS-TX.

**KEYWORDS:** Triphenylmethane dye, Surfactants, Binary Complex, Stability

**INTRODUCTION :**

Subsequent developments showed that the addition of detergent solution to a triphenylmethane organic dye solution forms a new modified reagent species as dye: surfactant complex. These modified



# Synthesis and antimycobacterial evaluation of new 1-substituted benzyl-4-(1-phenyl-3-substituted phenyl-1H-pyrazol-4-yl)-1H-1,2,3-triazole Derivatives

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## ABSTRACT

A new series of 1-substituted benzyl-4-(1-phenyl-3-substituted phenyl-1H-pyrazol-4-yl)-1H-1,2,3-triazole derivatives, 5a-k have been synthesized. The structure of the newly synthesized compounds was determined by spectral analysis. The title compounds were screened for their preliminary antitubercular activity against Mycobacterium tuberculosis H37Ra active and dormant (MTB, ATCC 25177) and antimicrobial activity against standard Gram-negative bacteria, Escherichia coli (NCIM 2576), Pseudomonas fluorescens (NCIM 2059) and Gram-positive bacteria, Staphylococcus aureus (NCIM 2602), Bacillus subtilis (NCIM 2162). Most of the synthesized compounds reported moderate activity against M. tuberculosis H37Ra and Bacillus subtilis strains.

**Keywords:** 1,2,3-Triazole, Pyrazole, Antitubercular Activity, Antibacterial Activity

## I. INTRODUCTION

Mycobacterium tuberculosis (MTB) was one of the top 10 causes of death worldwide and was responsible for more deaths than HIV and malaria [1]. Due to emerging infectious diseases and the increasing number of multi-drug resistant microbial pathogens in the last decades, a need for new classes of antimicrobial agents is warranted. The increase in antibiotic resistance due to multiple factors has encouraged the search for new compounds which are active against multi-drug resistant pathogens.

The synthesis of motifs containing more than one heterocycle ring has received much attention in recent years. Triazole and its derivatives are important class of bioactive molecules. Among other heterocyclic derivatives, triazole compounds were reported as most promising candidates towards anti-TB activity [2-8]. They also exhibit significant pharmacological activities such as anti-microbial [9,10], anti-convulsant [11], anti-proliferative [12], anti-cancer [13], anti-malarial [14]  $\beta$ -lactamase inhibitors [15], fungicidal [16], insecticidal [17] and anti-viral activity [18].

Pyrazole and its derivatives are important structure in medicinal chemistry that could provide a rich spectrum of biological activities [19-28]. The structural diversity and biological importance of triazole and pyrazole have made them attractive targets for synthesis. 1,2,3-Triazole and pyrazole rings present in the same molecule could be convenient models for investigation of their biological activity. Keeping in mind the biological significance of triazole and pyrazole derivatives, we report herein the synthesis 1-substituted benzyl-4-(1-phenyl-3-substituted phenyl-1H-pyrazol-4-yl)-1H-1,2,3-triazole derivatives, 5a-k as antimycobacterial agents.

## II. METHODS AND MATERIAL

All the reactions were monitored by thin-layer chromatography (TLC). TLC was performed on Merck 60 F-254 silica gel plates with visualization by UV light. Melting points were determined in capillary tubes in silicon oil bath using a Veego melting point apparatus and are uncorrected. <sup>1</sup>H NMR and <sup>13</sup>C NMR spectra were recorded on BRUKER AVANCE II 500 NMR spectrometer (Bruker Instruments Inc., Billerica, MA,



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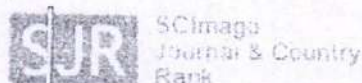
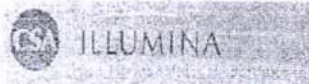
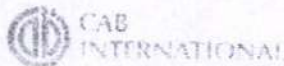
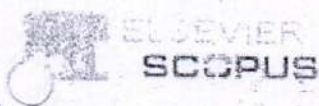
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## COMPARITIVE STUDY ON PHYSICO-CHEMICAL AND BACTERIOLOGICAL ANALYSIS OF HARVESTED RAINWATER AND NON HARVESTED GROUNDWATER

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### ABSTRACT

Rain Water Harvesting, an effective remedy on the water crisis, is a method of capturing the rainwater from rooftop catchment and its storage in subsurface groundwater reservoirs. It is a multipurpose way of supplying water in which rainwater from rooftops can be used for domestic purposes by storing. In many states where it has made mandatory, the implementation has become successful in water conservation and watershed management. Kada, a village in district Beed of Maharashtra State in India, is in a strongly drought-prone area. It is in this region present studies were undertaken for the conservation of natural rainwater and its storage in either surface water or in tube-wells. By constructing Rain Water Harvesting systems at five different locations in Kada, which included schools and some crowded public places, the researcher has found a successful rise in water levels of bore-wells and people are enjoying the results. Studies were also carried out to find the water quality and purity of harvested rainwater and it was compared with the water quality of non-harvested groundwater in the same vicinity. Water samples from six different sites were assessed for physicochemical analysis and from ten sites for bacteriological analysis. The different physicochemical parameters studied are pH, turbidity, chlorides, nitrates, sulfates, TDS, hardness, alkalinity, iron and fluoride. Researcher assessed potability as per IS 10500 Standards for drinking water quality assessment, and comparative studies showed that water gets more purified naturally when rainwater is harvested.

**Keywords:** Water crisis, Rainwater harvesting, Physic-chemical analysis, Bacteriological analysis.

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### INTRODUCTION

Rain Water Harvesting is the most sustainable solution on water crisis<sup>1</sup>. It is the most convenient and easily adaptable method for overcoming water scarcity during the water crisis. Rainwater harvesting is a technique of collection of rainwater from rooftop catchment and its storage in sub-surface natural reservoirs or tanks before it is lost as surface runoff. One of the most efficient methods of rainwater harvesting is Roof Top Water Harvesting. Efforts should be made to ensure that common man gets sufficient pure water, pure air, and pure food. Implementing this fact, it has been decided to procure Rain Water Harvesting system at some public places in Kada town, in district Beed of Maharashtra state in India as Kada is the village where total annual rainfall is very less. Most prominent advantages of RWH includes:

- (a) It can minimize the load and pressure on public water supply which is the main source of water supplies in cities;
- (b) It is cost-effective and efficient method and hence is economically feasible and affordable to common man;
- (c) It increases moisture holding capacity of soil important for development of vegetation
- (d) Groundwater level gets increased and highly recharged during rainfall as studied by<sup>1</sup>. RWH can also overcome the problem of the water crisis, it can reduce the load on traditional water sources, and can also alleviate nonpoint source pollutant loads, it can help in controlling climate change impacts, and can contribute to the stormwater management as discussed by E. Eroksuz and A. Rahman, et al<sup>2-6</sup>. The main cause behind the problem of the water crisis is that the consumption and requirement of fresh water have



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## Goods and Services Tax (GST)

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### ABSTRACT

Goods and Services Tax (GST) is a comprehensive tax levy on manufacture, sale and consumption of goods and services at a national level. One of the biggest taxation reforms in India the (GST) is all set to integrate State economies and boost overall growth. Currently, companies and businesses pay lot of indirect taxes such as VAT, service tax, sales tax, entertainment tax, octroi and luxury tax. Once GST is implemented, all these taxes would cease to exist. There would be only one tax, that too at the national level, monitored by the central government. GST is also different in the way it is levied — at the final point of consumption and not at the manufacturing stage. At present, separate tax rates are applied to goods and services. Under GST, there would be only one tax rate for both goods and services. The goods and services Tax will indeed be a further significant improvement towards a comprehensive indirect tax reforms in the country. Integration of goods and services taxation would give India a world class tax system and improve tax collections. It would end distortions of differential treatments of manufacturing and service sector. GST is expected to create a business friendly environment, as price levels and hence inflation rates would come down overtime as a uniform tax rate is applied. It will also improve government's fiscal health as the tax collection system would become more transparent, making tax evasion difficult. An attempt is made

in this paper to study the concept of goods and service tax and its impact on Indian economy. The study also aims to know the advantages and challenges of GST in Indian scenario.

**Key Words:** goods n services tax, economic development, Indian economy and value added tax.

### INTRODUCTION

Taxes are the only means for financing the public goods because they cannot be priced appropriately in the market. They can only be provided by governments, funded by taxes. It is important the tax regime is designed in such a way that it does not become a source of distortion in the market or result in market failures. The tax laws should be such that they raise a given amount of revenue in an efficient, effective and equitable manner. Tax policies play an important role on the economy through their impact on both efficiency and equity. A good tax system should keep in view issues of income distribution and, at the same time, also endeavour to generate tax revenues to support government expenditure on public services and infrastructure development. GST stands for Goods and Services Tax. It is a domestic trade tax that will be levied in the form of a value added tax on all goods and services -in practice with some exemptions. A value added tax exempts all inputs including capital goods. Hence, it becomes a general tax on domestic consumption. It is a convenient and economically efficient way of taxing consumption. If it is levied at a single rate and there are only very few exemptions, it becomes a proportional tax on consumption. In order to ensure that the tax burden is distributed according to the consumption of different individuals, it must be levied on the basis of the principle of destination, that is to say that the tax on a good should go to the state in which the concerned consumer lives. This automatically takes place if the tax is levied at only the central level, or if the state is a unitary



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## महिला आरक्षण बदलत्या राजकारणाची दिशा

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( राज्यशास्त्र विभाग ), ता. आष्टी,

जि. बीड

### प्रस्तावना :-

आधुनिक शासन व्यवस्थांमध्ये महिलांच्या अधिकारांमध्ये मोठ्या प्रमाणात वाढ होत असताना दिसून येते. जगामधील बहुतेक राजकीय व्यवस्थांमध्ये महिलांच्या राजकीय, सामाजिक, आर्थिक इ. बाबतीत अधिक-अधिक प्रमाणात अधिकार स्वातंत्र्य, स्वायत्तता व सुरक्षितता निर्माण करण्यासाठी वेगवेगळ्या पातळीवर खूप मोठ्या प्रमाणात प्रयत्न होत असताना दिसून येते आहेत. या प्रयत्नांमध्ये भारतीय राजकीय व्यवस्था देखील मागे राहिली नाही. समाजाच्या वेगवेगळ्या आघाड्यांवर महिलांचा सहभाग वाढवण्यासाठी त्यांना समाजाच्या मुख्य प्रवाहामध्ये सहभागी करून घेण्यासाठी सामाजिक समतेच्या दिशेने वाटचाल करण्यासाठी महिलांचा सहभाग राजसत्तेमध्ये वाढत आहे. त्यामुळे सत्ता प्राप्तीची महत्त्वाची केंद्र महिलांच्या सहभागामुळे सामाजिक समतेत समाविष्ट होत आहेत. समाजातील सामाजिक विषमता कमी होत आहे. सत्ता प्राप्तीच्या राजकरणामध्ये भारतीय महिला सर्व आघाड्यांवर योग्य दिशेने वाटचाल करत असताना दिसून येतात.

### महिला राजकारणाचा नवा सिध्दांत :-

राजकरणामध्ये महिला पुढे आल्या, त्यांनी राजकीय सत्तेमध्ये वाटा मिळविला की त्यांचे सामाजिक व आर्थिक स्थान भक्कम होते. जिच्याकडे जुलुम व अत्याचार या दृष्टीने नव्हे तर सहभाग व विकास या दृष्टीने पाहिले जाते नकारात्मक दृष्टीकोन बदलून तो सकारात्मक होतो व लोक महिलांकडे आदरयुक्त, भितीच्या दृष्टीने पाहू लागतात. महात्मा गांधीचे स्वप्न वास्तवात आणण्याचे कार्य २३ एप्रिल १९९३ रोजी शक्य झाले. या दिवशी त्यांचा ग्राम स्वराज्याचा विचार प्रत्यक्ष कृतीत आला आणि पंचायत राज व्यवस्थेला घटनात्मक स्वरूप प्राप्त झाले.

भारतीय समाजातील महिलांचे स्थान उंचविण्यास प्रारंभ हा ग्रामीण भागापासून केला पाहिजे. खेडे हा घटक धरून असे बदल जर करण्यात आले तर त्याचे लाभ अधिक चांगल्याप्रकारे होऊ शकतील. महिलांचे आरक्षण हे कागदावरच राहू नये ते कृतीत यावे म्हणून बदलाची गरज आहे. असे बदल जर तत्व व व्यवहार या दोन्ही दृष्टीने झाले तर जिल्हा परिषदेमधील ५० टक्के आरक्षणाचे अधिक चांगले लाभ होऊ शकतील. महिला





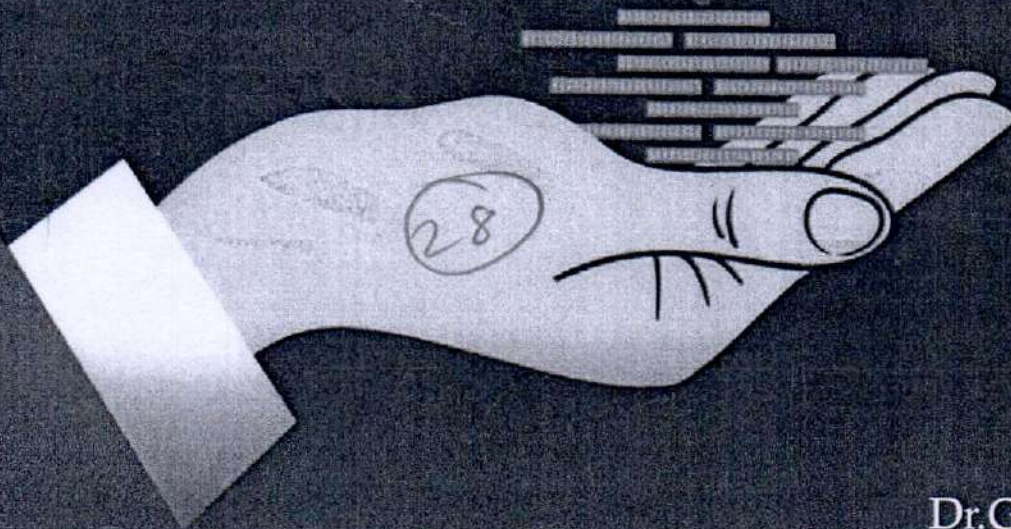
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**Special Issue On  
Impact of GST on Indian Economy**



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## Advantages and Disadvantages of Goods & Service Tax

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### Abstract

The introduction of GST is a single move enveloping all indirect taxes that will make country single unified common market. It is a destination based multipoint tax system covering in its ambit both goods and services. It is single tax on the supply of goods or service, right from the manufacturer to the consumer where credits of GST input taxes paid at each stage shall be available in the subsequent stages of value addition, thus, makes GST essentially a tax only on the value addition at each stage. Hence, the final consumer will bear only the GST charged by the last dealer in the value chain along with set off benefits at all the previous stages. All other indirect taxes will be abolished once GST becomes applicable. Being India as federal in structure, three types of GST will be levied - Central GST (CGST), State GST (SGST) and Integrated GST (IGST). This paper highlights the concept, benefits and sectoral analysis of the economy in the implementation of GST along with types of GST returns.

**Keywords:** GST, Economy, Tax structure, price, consumer.

### Introduction

Indirect taxation in India needs a definite revamp as we have multiple taxes like service tax, excise duty, sales tax and so on, for a single good or service. The taxation system has become very complex and leading to various issues like double taxation and cascading effects etc., which ultimately affecting to the general

public, with increasing prices and lack of transparency. The present system is not only affecting the general public, but also the investors, industries and business men and tax payers as well, which is hampering the easy of doing business and growth of economy at large. Indirect taxes are related to growth of GDP, so it plays an important role.

Goods and Services Tax (GST) is considered to be a best solution for all these issues and which is expected to bring in tax efficiency, simplicity, transparency and degree of harmonization to the tax base, tax rates and tax infrastructure. More than 160 countries around the world have already implemented GST and implementation of GST in India would bring in similarity. Now, implementation of GST has become certain in India and it is a right time to understand it. So this paper tries to throw a light on various aspects of GST and to know its probable impact on Indian economy and its sectors. The data are collected through various secondary sources like reports of Government, professional bodies, working committees and also from research papers, articles, news, budget sessions etc.

### Objectives of the Study:

- To understand the Concept of Goods and Service Tax
- To understand the Advantages and Disadvantages of Goods in India

### Research Methodology:

The information in the study is collected from secondary sources that are from various online sources, websites, articles related to Goods and Service Tax.

### Concept of GST:

Goods and Service Tax is a comprehensive tax levy on manufacture, sale and consumption of goods and services at National Level. GST is a part of proposed tax forms in India having an extensive base that instigate the applicability of an efficient and harmonized consumption tax system. GST has



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## The Adaptation of Literature to Cinema

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### Introduction

The literature and film are fine arts which are closely related to each other but still they are different in certain ways. These are fascinating forms of knowledge having great impact on human psyche. According to William Walsh, "Literature can be read as the chronicle and embodiment of the state and the history of the language." Cinema is nothing but a mirror to be shown to the society. It is a prominent way to express the literature with the help of modern technology. Literature and films are artistic presentation of essays, novels as well as stories citing information about history in the social contexts and also sometimes fantasies. In short, it can be not only exploration of the ideas but also history.

The history of the literacy films is started with the films with the 13 scenes of the Bible in 1897 by Lumiere brothers. In the early 20th century, some novels and plays such as *Cinderella*, *Gulliver's travels* (1902), *Robinson Crusoe* (1902), *the Damnation of Faust* (1904) and *Frankenstein* (1905) were produced films. Early literacy film has begun with the film makers, respect on writers and desire of artistic achievement to adopt the classic novels to visual films. So, they tried to reproduce the plot and scenes and accurately as they can. It is a matter of discussion that either literature or cinema is effective. Both of these parts have its own impact. Writers give freedom to the readers to imagine and develop the plot. Most of the films are based on literary work from last some decades. It is not only true for Indian cinema but also for the remaining world. The world of cinema is become easier for the modern generation with the help of mobile and internet. Instead of theatres, films have taken place into human pocket. It is true that some people prefer watching films based on certain novel and avoid the reading of the novel. Indian English literature and cinema are result of colonization of India. Both of these genres are born in British time. The movies based on literary films are not exactly the same thing as the novelists or the authors have presented in their creation. In fact of these contradictions, many similarities can be observed between film and literature. The audiences watch films as a show. Film can be almost an attitude towards life. The film is an innovation of science which has its unique importance as it preserves these ideas a particular work of literature in spite of its some queries forever. Films help to create constant effect of emotion through its conductivity. Films are nothing but the propagation of ideas.

Literature has attracted all creative filmmakers in India because Pramathesh Barua and Debaki Basu have based their films on the works of writers such as Sarat Chaterjee, Satyajit Ray;s film *Pather Panchali* which was based on Bibhuti Bhushan Bandopadhyaya;s work. This Indian cinema had achieved great success on the international platform. Many of the eminent filmmakers across the world are still making films based on Shakespeare, Dickens, Hemingway and Chetan Bhagat. The filmmakers adapted all genres of literature i.e. drama, novel, short story, poetry, biography etc. The novella or short story is more often the right length for adaptation to feature film. Chetan Bhagat is one of such Indian English novelist having great success and fame because the filmmakers wait for his novel to be published and they could make film based on his



**The Adaptation of Literature to Cinema****<sup>1</sup>Mr. Karale N.G. & <sup>2</sup>Mr. A. S. Kalyankar**Dept. of English, S. K. Gandhi Arts, Amolak Science & P. H. Gandhi Commerce College,  
Kada, Tal. Ashti, Dist. Beed - 414202**Introduction**

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# PHYSICO - CHEMICAL STATUS OF DHANORAWATERBODIES IN RELATION TO WATER POLLUTION

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**Abstract:** In the present investigation Dhanora water reservoir the physico-chemical parameters to assess the water quality status. The parameters studied included, Temperature, Transparency, pH, Dissolved oxygen (DO), Free Carbon dioxide, Hardness, Calcium, Magnesium, Chlorides, Turbidity, Total Nitrates, Sulphates were monthly analysis over the period of Ten months suggest that the water is not more polluted but shows seasonal variations in the water quality.

**Key words:** Physico-chemical parameter, Dhanora water reservoir

**INTRODUCTION:** The Dhanora water reservoir is an Irrigation project with an earthen dam on river Kambli near village Dhanora. The river Kambli is a tributary of the river Bhīma in a Krishna basin. It irrigates the land in the Ashti Tehsil of Beed district. The Dam is located at an altitude of 18° .50' (N) and longitude 74° .55' (E). and also provide drinking water near villages. The considerable Limnological investigations are carried out on manmade impoundment. In India workers like Ganapati (1940, 1956, 1957, 1962), Sexena M.M. (1982) Shreenivasan (1974) Krishnamurti (1965) have done some hydro biological work a shallow water bodies in south India. A few like David et. al (1969) Jhingran (1963) have worked on the large brackish water lakes and reservoir. Shreenivasan (1962-1974) reported a detailed account on the productivity of tropical waters of Tamilnadu. In recent studies on hydrobiology of the fresh water lentic habitats about its physico-chemical characteristics and their productivity is well studied by Trivedy P.K. Goel (1988) Patil et. al (2002) Lendhe et al (2004) Ramakrishna (2002).

**Materials and Method:** Four sampling stations were selected. Water samples were collected at monthly intervals from sampling stations in



# DROUGHT ISSUES AND STRATEGIES FOR EFFICIENT DROUGHTS MANAGEMENT

12

**Dr. Udhav Chavan**

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St. Dnyaneshwar College Newasa, Dist. Ahmednagar.

**Abstract:**

The Drought is a climatic irregularity, characterized by lack of supply of moisture resulting either from sub-normal rainfall, inconsistent rainfall distribution, higher water need or a combination of all the factors. The intensifying impacts of droughts have increasingly drawn the attention of scientists, planners and society. The susceptibility to drought in relation to the increasing needs of the growing population has become a point of great concern, especially on the world's face. In spite of the technological developments in providing improved crop varieties and better management practices, in India, agriculture has been considered a gamble as the agricultural productivity is strongly influenced by the mood of the monsoon.

**Key Words:**

Meteorological, Hydrological, Agricultural, dryland farming, atmospheric circulation.

**1. Introduction:**

Droughts are the resultant of severe water shortage due to lack of rains over extended periods of time. Affecting various human activities and lead to problems like widespread crop failure, un-replenished ground water resources, depletion in reservoirs, shortage of drinking water and, reduced fodder availability etc. Repetitive a region adopts itself to a certain level of water shortage based on the long-term climatic conditions experienced by it. Any negative exit from these levels creates conditions of drought, depending on the intensity and duration of this scarcity. Thus drought conditions differ from region to region. Also the impact of drought over a region varies depending on which economic activity is damaged. Because drought affects many economic and social sectors, results of definitions have been developed by a variety of disciplines and the approaches taken to define it also reflect regional and philosophical variations.

In general, drought means dissimilar things to dissimilar people. To a meteorologist it is the absence of rain while to the agriculturist it is the deficiency of





## Sources of Irrigation in Washim District: A Geographical Study

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----- ( 25 ) -----

### Abstract:

The irrigation is confined to supply water to crops whenever it requires. All tehsils of the Washim districts experiences uneven distribution of Irrigation and irregularity of rainfall. The human beings on the earth surface depends on agriculture. So the irrigation is important measure. Irrigation is necessary for traditional agriculture to overcome upon droughts and scarcity of rainfall. In modern agriculture need of irrigation increased day today. Irrigation constitutes one of the effective technical measure of the growth in agricultural production. There are many types of irrigation. These are Well, Canal and River irrigations. All these types of irrigation practised in Washim district.

**Keywords:** Wells, River, Tank, Canal irrigation.

### 1. Introduction:

The concept of irrigation implies the existence of source of water supply within a reasonable distance and an arrangement to regulate the supply of water according to the day to day needs of the crops raised in the fields. Naturally therefore all areas which are cultivated under purely rain fed conditions are treated as unirrigated lands (Census of India, 1991). Spatial pattern of changes in net irrigated area to net sown area, along with a deliberation of sources wise trends in irrigated area. The emphasis is on to focus the spatial distribution of Irrigation pattern in Washim district. Geographical and cultural factors have considerable impact on agriculture. But all of them are not equally significant in affecting the area variation and gradual development of agriculture in area. Water is probably the most important input besides fertilizers, insecticides, high yield variety (HVY) seeds and modern technology is useful for agricultural development.

The irrigation is the main axis, which the whole agricultural activities revolve around it. Even in study area, water is probably single determinant of land use. The supply of moisture for agriculture is commonly unsatisfactory, being associated with the erratic nature of monsoon rainfall. Moreover, agriculture in most parts of district is handicapped for lack of water through November to May. Irrigation is necessary for spreading the cultivated area, in its wider use will reduce the dependence upon the oscillation of the monsoon and increase the area that can be sown two times within a year.

### 2. Objective:

The main objective of the paper to study the irrigation development, Examine the sources of irrigation and disparities in irrigation are the specific objectives of the study.





## Basic factors of Sustainable Agricultural Development

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Dr. P.H.Mhaske - St. Dnyaneshwar College Newasa, Dist. Ahmednagar

(8)

### Abstract:

In simplest terms, sustainable agriculture is the production of food, fiber, or other plant or animal products using farming techniques that protect the environment, public health, human communities, and animal welfare. This form of agriculture enables us to produce healthful food without compromising future generations' ability to do the same. With reference to rural areas-sustainable development implies sustainable agriculture. Agriculture does not mean only production of crops, but includes live-stock, poultry, forestry, fishing, and rural handicrafts and other occupations based on rural resources. Sustainable agriculture should be favorable to Individuals, society, and environment. Sustainable agriculture is that which is healthy in eco-system, economically viable, socially equitable and charitable.

**Key Words:** Healthy Ecosystem, Economic Feasibility, Social Equitability, Charitable Approach, Urban Garbage, Cropping Pattern.

### Introduction:

It has been observed that commercialization of agriculture is harmful in the long run for society and the environment. Modern technology has disturbed the total social and ecological pattern. The amount spent on commercial agriculture is spent on traditional agricultural technologies then the traditional agriculture will also give good harvests. Mostly modern agricultural techniques have been tried in rich agricultural areas. Also success stories about commercial agriculture have come from rich agricultural zones. If commercial agriculture can give increased yields then why these techniques cannot give increased yields in poor agricultural zone also. It is important to understand that Traditional Agricultural Area, because of their poor physical environment, cannot compete with Commercial Agricultural Area even if most expensive agricultural techniques are introduced there. Every area has its limitation in the use of its natural resources. If a production system is adopted according to the availability of natural resources, the area can become self-dependent. In order to make any area self-dependent, the process of sustainable development should be adopted. Sustainable development can be defined as "appropriate use of resources within the environmental and social limitations".

### Objective:

This paper gives the information about the factors which responsible for sustainable agricultural development, who wants to find idea.

### Data Base and Methodology:

This paper using published literature of known and unknown authors of sustainable agricultural development and its related websites, data is compiled for this purpose.

### Basic Factors:

#### A) Healthy Ecosystem:

A healthy eco-system can be achieved by controlling two components. One is self-regulation in the ecosystem and second is resource efficiency. Self-regulation can be achieved by introducing diversity in species. Each species fulfills certain role in regulations of the system and its cycling of energy and nutrients and soil health. In a resource efficiency system all resources, including green manure, perennial plants and compost, are used for fertilization of soil. Resource efficiency includes utilization of animal powered traction which will not only conserve fuel and minimize pollution but recycle animal feed into manure. Use of windmills and solar powered pumps and bio-gas would generate significant amount of energy and will save other resources. Plantation of useful trees and plants, which nourish humans in all respects is another requirement of a resource efficient system Trees have multi-purpose uses, they provide food, fuel, building material, fertilizer and oxygen. They also protect soil form wind and water erosion.

#### B) Economic Feasibility:

Sustainable agriculture should be economically viable. There should be positive net return. It must produce sufficient food to meet the needs of the family of the farmer. It should also provide for the family well-being, health, satisfaction and security. In commercial agriculture, health care costs from exposure to chemical fertilizers, cost of cleaning up water and productivity losses due to soil erosion are not considered generally. It focuses only on market prices. Economic viability is based only on short term benefits relating to supply and demand. A holistic system of accounting is needed to ensure that agricultural systems are truly economically viable in the short and long runs.

#### C) Social Equitability:

Sustainable agriculture should be socially equitable. The system must ensure that resources and power are distributed equitably, so that basic needs of all are met and their rights are assured. Farmers need adequate resources, including capital, technical assistance and market opportunities.

#### D) Charitable Approach: -





### आधुनिक महाराष्ट्रातील कामगार चळवळ

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#### प्रस्तावना

युरोपातील औद्योगिक क्रांतीने भांडवलदार व्यवस्थेवरील कामगार चळवळी एक वेगळी प्रकृतीची चळवळी निर्माण केली. या क्रांतीने युरोपात कामगारांचे हक्क वाढवून देण्यासाठी अनेक कायदा आणि कायदांचे अंमलबजावणी कांतीने मध्ययुगाचा अंत ब्रह्मण अशा अनेक आधुनिक युग अन्वयाने केली. त्यांनी मजूर कामगारांच्या हक्कांसाठी जागृती निर्माण केली. शासनाला याची फुटली. त्याच हक्क मिळवण्यासाठी संघटनेची स्थापना करण्यात आली. त्यामुळे समान हितसंबंध गुंतवले कामगार एकत्र येऊन व्यवस्थेवर दबाव निर्माण करू लागले. युरोपातील जाणीवतून महानायक मार्क्स आणि एंगल्स यांनी भांडवलशाहीचे उच्चाटन करणे राज्यातील अशाच प्रकारचे जागृती समाजरचना निर्माण करण्याचे ध्येय उराशी घ्यावे आणि या ध्येयपूर्तीचे साधन म्हणून त्यांनी कामगार संघटनेकडे पाहिले. १९१७ च्या रशियन राज्यक्रांती नंतर सध्या जगामध्ये कामगार चळवळी निर्माण झाल्या. त्यांनी अनेक कायदा नव्वता. १

१९ व्या शतकात ब्रिटीश सत्तेची स्थापना झाली आणि भारतीय उद्योगधंद्याचा ज्हास झाला. वेगवेगळे कामगार शेतीकडे किंवा मजुरी करण्यासाठी शहराकडे येऊन आणि कारखाने गिरण्यांमध्ये कामी येऊन कामगार मुंबईत ५० व्यापारी एकत्र येऊन ५ व्याय भांडवलशाही संघटनेची स्थापना केली आणि १९ व्या शतकात महाराष्ट्रात पहिली कापड गिरणी सुरू केली. १८९० पर्यंत १३७ कापड गिरणी सुरू झाल्या. पहिली महाराष्ट्र गिरणी महाराष्ट्रात २६४ गिरण्यांची स्थापना झाली होती. २

#### संशोधनाची उद्दिष्टे

१. महाराष्ट्रातील कामगार चळवळीचा आढावा घेणे.
  २. महाराष्ट्रातील कामगार चळवळीच्या कायांचे विश्लेषण करणे.
- भारतात ब्रिटीश सत्तेची स्थापना झाल्यानंतर युरोपातील व्यवस्थेची प्रतिकृती महाराष्ट्रात कामगार चळवळी अपरिहार्य होते. परंतु तरीही युरोपीयन कामगार संघटनेच्या लढाऊ प्रवृत्तीची प्रतिकृती महाराष्ट्रात कामगार चळवळी बराच काळ लागली. ३ १८७५ पासून कामगार संघटनेच्या दिशेने काही प्रयत्न केले. अनेक कायदा आणि कामगारांचे हाल कामी करण्यासाठी व विशेषतः स्त्री कामगारांचे अनेक कायदा करण्यात आले. त्यामुळे कामगारांचे प्रयत्न हाणून पाडले. इ.स. १८९० मध्ये नारायण मेशजी कापड गिरणी संघटनेची स्थापना झाली. या संघटनेच्या स्थापनेत अनेक नावे महत्त्वाचे असलेली होती. त्यात नारायण सुखदेव, गेणू बाबाजी, रघु भिकाजी, विठ्ठलराव कोरगावकर, रामचंद्र उद्रे, नारायण पवार, कृष्णाजी कुंभार हे. या संघटनेकडे आपले नियम, पैसा नव्हता तरीही भारतातील ही पहिली कामगार संघटना बराच काळ काम करत राहिली. ४

#### फॅक्टरी कमिशन

मुंबईतील कामगार संघटनेत नसल्यामुळे त्यांना कामी येऊन काम करणे सुरू करणे सुरू केले. गिरणी मालक जाडेभरडे कापड स्वस्तात खपवत असत. त्यांच्या तुलनेत मॅचमेकर कामगार जाडेभरडे मालक



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## Stu An Introduction to the Literacy Programme in Rural College Library: A Case Study of AJVP Mandal's Gandhi College Library Kada

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**Abstract:** - *Information literacy means to know when and why you need information, where to find it, and how to evaluate, use and communicate it in an efficient manner. An information literate person is one who is able to recognize when information is need and have the ability to locate, evaluate and use effectively the needed information. This paper briefly describes the Information Literacy Programme at the Gandhi College Library, Kada. The positives outcomes of the programme are shown.*

**Keywords:** Information, Literacy, Higher Education, OPAC.

### Information Literacy and Higher Education

Individuals have the intellectual abilities of reasoning and critical thinking and by helping them, within a framework of learning; colleges and universities provide them with a foundation for growth. This foundation is valuable throughout their careers as well as in their roles as informed citizens and members of communities. Information literacy is a key component of and contribution to lifelong learning. Information literacy means to know when and why you need information, where to find it, and how to evaluate, use and communicate it in an efficient manner. An information literate person is one who is able to recognize when information is need and have the ability to locate, evaluate and

use effectively the needed information. Literacy competency extends learning beyond the classroom and provides practical insights. The information literacy augments the student's ability to evaluate, map and use information. Information literacy addresses related concepts like user education, Library introduction, Bibliographic Instruction, etc. But 'Information literacy' has broader perspective and wider application than these concepts.

### Gandhi College

Amolok Jain Vidya Prasarak Mandal's Established its Arts Commerce and Science College in Kada in 1996. It happens to be the first education trust as well as second rural college in Asthi Tehsil, Beed. This area was extremely





## Silver Iodide: An Efficient Heterogeneous Catalyst for one Pot Synthesis of 2, 4, 5-Tri-substituted Imidazole

A. P. Katariya, M. V. Katariya, S. U. Tekale, R. D. Ingle, S. U. Deshmukh, A. K. Dhas and R. P. Pawar\*

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### Abstract

Silver iodide (AgI) is used as efficient, mild and water soluble catalyst for the synthesis of 2, 4, 5-tri-substituted imidazole by one pot three component condensation of benzil, an aldehyde and ammonium acetate in ethanol at reflux condition. The advantages of this method are mild reaction condition, simple procedure and solubility of catalyst in water for its removal from reaction mixture.

### 1. Introduction

Imidazole, a five member heterocyclic compound having nitrogen at 1 and 3<sup>rd</sup> position. Imidazole scaffold extensively represent variety of natural product such as histamine, histidine, biotin, alkaloids and nucleic acids. This imidazole scaffold is also found as constituents of various synthetic medicines. It shows various medicinal properties such as anticancer, anticoagulants, anti-inflammatory, antibacterial, antifungal, antiviral, antitubercular, antidiabetic and antimalarial. There are so many well prescribed drugs which contain imidazole moiety.

Imidazole was firstly synthesized by Radiszewski by condensation of dicarbonyl compound, benzaldehyde in the presence of ammonia to yield 2, 4, 5 tri-substituted imidazoles. Because of high medicinal values

various synthetic methods are developed for synthesis of 2, 4, 5-tri-substituted imidazole via condensation of benzil, aromatic aldehydes and ammonium acetate in protonic acids, Lewis acids, silica supported acid and ionic liquids etc.

Most of these methods require prolong reaction time, harsh reaction condition affords low yield and shows difficulty in removal of catalyst from reaction Mass. AgI as catalyst found to be more efficient and water soluble in one pot synthesis of 2, 4, 5-tri-substituted imidazole.

Herein we report the one pot three component condensation of benzil, an aldehyde and ammonium acetate in ethanol using silver iodide as efficient and mild catalyst for the synthesis of 2, 4, 5-tri-substituted imidazole (Scheme-1).



37 (a)

## Redefining Children and Women as Heroes in Deborah Ellis' Trilogy

Mr. Narendra T. Gawali

Asst. Prof. S.K. Gandhi College, Kada, Tal. Ashti, Beed (MS)

**Abstract** Children's books in the twentieth century and after are nourished by such concepts of violence and war related themes. The present trilogy here focuses on the female hero, which is still less frequent than the male. These books tell the story of the lives of children, particularly young girls living in the war zones of Afghanistan.

**Keyword:** Feminine, Child Hero, Maturity, Authenticity, Violence, War

### Introduction:

Children's books in the twentieth century and after are nourished by such concepts of violence and war related themes. Other themes are also notable in demonstrating violence and war such as those concerning children who were evacuated during World War II (Nina Bowden's *Carrie's War*), boys surviving in bombed cities (Robert West All's *The Machine-Gunners*). The Pearl Harbor attack. Although violence has been deliberately attached to the realm of children's literature, as far back as fairy tales and folk tales which were delivered in oral traditions, the themes of war in many novels in the twentieth century can be said to have undergone a transformation into a consideration of violence in a deeper perspective.

The present trilogy here focuses on the female hero, which is still less frequent than the male. Two eleven year old girls--Parvana and Shauzia--meet in bombed-out Kabul's marketplace. It's 2000 and they are disguised as boys. Each works at whatever she can --Shauzia delivering tea to busy merchants, Parvana reading and writing letters for others. In the weeks ahead they work together digging up human bones for profit and selling cigarettes and candy from trays they work hard to purchase. War, bombs, and repression have thrust each from her home into the outside world, a world threatening to any with dissident political opinions and to all women for showing their faces or simply being in public. They are the sole breadwinners for their families. Startled to see each other without long hair and in boys' clothing, Shauzia and Parvana quickly form an alliance. Marked by fear, determination, camaraderie and dreams of meeting atop the Eiffel Tower in twenty years, the girls' time together is short-lived but its effects are deep and far-reaching. With their friendship as foreground in its first novel, then backdrop in the following two, Deborah Ellis' Breadwinner Trilogy chronicles the effects of war that force these two down divergent paths from the marketplace in 2000 to separate refugee camps about a year later. First told from Parvana's viewpoint then Shauzia's, the trilogy makes vivid the physical and psychological burdens borne by children who, even with adults nearby, must take on responsibilities far beyond their years. Parvana's family has lost the oldest son to a land mine and their home to bombs. They migrate from place to ever more crowded place. Shauzia's circumstances mirror Parvana's. She says: "When Parvana's father is inexplicably released from prison, he decides that Parvana and he will walk north to locate the rest of the family. Mrs. Weera decides to join her sister at a refugee camp in Pakistan. And, Shauzia, desperate to have a life of her own and against all cultural mores, decides to leave her family to join a group of shepherds in the mountains." () Parvana's Journey, the second in the trilogy, is the story of refugee children adrift in the countryside. It opens with Parvana at her father's funeral. After weeks of walking alongside him to find the rest of their family, his health gives way, leaving





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## New Application of Permutation Group for Cryptography

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SAJVPM's Gandhi College, Kada  
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\*\*\*\*\*

### Abstract

The purpose of this paper is to take a short review of mathematical operations which are used in cryptography. Here cryptographic method is introduced by using permutation group in group theory. We provide a new algorithm for cryptography in which we use any permutation of positions of letters, encryption key and secret key for encrypting the plain text and the corresponding process is used to transform for decryption.

**Key words :** Cryptography, Data encryption, Data decryption, permutation, Applications to Cryptography.

### Introduction

Security is the main aspect for secure data transmission. Therefore network security is a fast changing technology in the field of computer science. The fundamental objective of cryptography is to enable two people to communicate over an insecure channels in such a way that any opponent cannot understand what is being said.

In cryptography we can use complex mathematical operations for the electronic communication. Cryptographic techniques based on the exchange of keys. These keys are used to encrypt and decrypt the information exchange where encryption is the process of obscuring information to make it unreadable without special knowledge. A cipher is an algorithm for performing encryption and decryption. The original information is known as plain text and encrypted form as cipher text. The cipher message contains all information of the plain text message but it not format readable by a human or a computer without the proper mechanism to decrypt it. In this cryptographic method we use permutation ciphers.

### Preliminaries:

The permutation cipher is also known as transposition cipher. It is based on permutation of the positions of letters. First split the plain text into blocks of  $m$  letters. This  $m$  is known as length of permutation. Then select any permutation as a secret key. Each number in a permutation associates with order of a letter in that word.

### Main Result:

Encryption:

Suppose we want to send a message,



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## वाचन संस्कृती वाढीसाठी ग्रंथालयाची भूमिका

डॉ. आर. एच. थोरवे

ग्रंथपाल श्रीमती शांताबाई कांतीलाल गांधी कला, पन्नालाल हिरालाल गांधी वाणिज्य व  
अमोलक विज्ञान महाविद्यालय, कडा, ता. आष्टी, जि. बीड.

प्रस्तावना: मानवी संस्कृती ही विकसित झालेली आहे ती भाषेमुळे. माणसाकडे अभिव्यक्तीसाठी भाषा आहे म्हणून तो आपले विचार भाषेच्या माध्यमातून व्यक्त करित राहिला. भाषा-संस्कृती अर्थात शब्द संस्कृतीला कायम स्वरूपी जतन करून ठेवण्याचे काम लिपीने केले आहे. लिपीचा शोध लागल्यानंतर वैचारिक क्षेत्रात फार मोठी क्रांती झाली. त्यानंतर मुद्रण कलेचा शोध लागला. त्यामुळे प्रत्येक पिढीचे विचार पुढच्या पिढीसाठी सहज उपलब्ध होऊ लागले. पुढची पिढी मागच्या पिढीच्या अनुभवाच्या आधारावर भविष्याकडे तेव्हाच झेप घेऊ शकेल, जेव्हा मी मागच्या पिढीच्या अनुभवांना आत्मसात करू शकेल. हे केवळ वाचन संस्कृतीतूनच शक्य आहे.

समाजतील लोकांच्या विकासासाठी आणि जीवनसमृद्धीसाठी मानवी जीवनात वाचनाला अनन्यसाधारण असे स्थान आहे. वाचनामुळे माणूस विचारी बनतो. ज्ञानप्राप्तीसाठी वाचन हे एक महत्वाचे साधन आहे. वाचनामुळे माणसाला सारासार विचार करण्याची क्षमता प्राप्त होऊन त्याचा बौद्धिक विकास होतो. साने गुरुजी, लोकमान्य टिळक, स्वातंत्र्यवीर सावरकर, दुर्गा भागवत व इतर अनेक महान स्त्री-पुरुषांच्या कर्तृत्वाच्या चरित्रकथा वाचल्याने वाचकाला आनंद मिळतो. त्यांच्याबद्दल वाचकांच्या मनात आदराची भावना निर्माण होते आणि त्यांचे वैयक्तिक जीवन समृद्ध व्हायला मदत होते. चांगल्या वाचनाच्या सवयी माणसाला प्रेरक ठरतात व त्यांना शुद्ध जाणिवांच्या पलिकडे घेऊन जातात. त्यांच्या ज्ञानाच्या कक्षा रुंदावतात आणि त्याला मानवी जीवनाच्या विविधांगाचे दर्शन घडवतात. या संदर्भात आपण पाश्चात्य देशांचे उदाहरण डोक्यांपुढे ठेवले पाहिजे. त्या राष्ट्रात जी जागृती झाली आहे त्याचे एक प्रमुख कारण त्यादेशातील लोकांची वाचनप्रियता हे होय.

वाचनाचे महत्त्व सांगताना कै. गोपाल गणेश आगरकरांनी असे म्हटले आहे की, "ज्याला एकदा चांगल्या वाचनाचा नाद लागला त्याच्या करमणुकीला सीमा नाही. ज्याला आपला वर्तमानकाळ सोडून भूतकाळात किंवा भविष्यकाळात प्रवेश करावयाचा असेल, त्याला पृथ्वीवर आजपर्यंत कोणत्याही देशात झालेले मोठमोठे तत्ववेत्ते, कवी, नाटककार यांचा समागम करून ज्ञानामृताचे सेवन करावयाचे असेल त्याला वाचनाखेरीज दुसरे साधन नाही." तसेच वाचनाचे फायदे विशद करतांना कै. विष्णुशास्त्री चिपळूणकर यांनी असे म्हटले आहे की, "वाचनाचा पहिला मोठा उपयोग म्हणजे त्याच्या योगाने चित्ताचे रंजन होऊन दुस-या करमणुकीच्या उपायांची गरज राहात नाही. खरा रसिक व विद्वान हा आपल्या पुस्तकालयात बसून निमज्ज झाला असता त्यास त्यावेळेस जे सुख होते असेल ते मोठ्या सार्वभौम राजास भर दरबारात राज्यसनावर बसल्यावरही मिळत नसेल" वाचनापासून ज्ञानप्राप्ती होते हे सांगण्यासाठी कै. विष्णुशास्त्री चिपळूणकरांनी आपल्या निबंधमालेतील 'वाचन' या निबंधात असे म्हटले आहे की, "जेवण जसे सावकाश नेमस्तपणे व नियमाने केले असता अंगी लागून शरीरास हितावह असे होते त्याप्रमाणे वाचायचे ग्रंथ जर पूर्ण लक्ष देऊन मनःपूर्वक असे बेताबेताने वाचले तर त्यापासून ज्ञानाचा लाभ होऊन निरनिराळ्या मानसिक शक्ती वृद्धीगत होतात."

शोध संज्ञा- ग्रंथ, वाचन संस्कृती, वाचन संस्कृती वाढीतील कारणे: मानवी जीवनात ग्रंथांना फार महत्वाचे स्थान आहे. शालेय जीवनात गुरुजींनी मनावर सारखे बिंबवलेले असते की, ग्रंथ हे आपले गुरु आहेत. लहानपणापासूनच आपण वाचायला लागतो. हळूहळू हा एक आवडता छंद बनून जातो. एखाद्या आवडत्या लेखकांचे पुस्तक समोर दिसताच माणसे तहानभूक विसरतात आणि पुस्तकांतल्या विश्वात रमून जातात. पुस्तकाबद्दलची माणसाची ओढ कधीच कमी होणार नाही. साणूस एकदा साक्षर झाला की, पुस्तकाशी त्याचं कायमच नातं जोडल जातं. करमणुकीचे, मनगुंतवण्याचे,

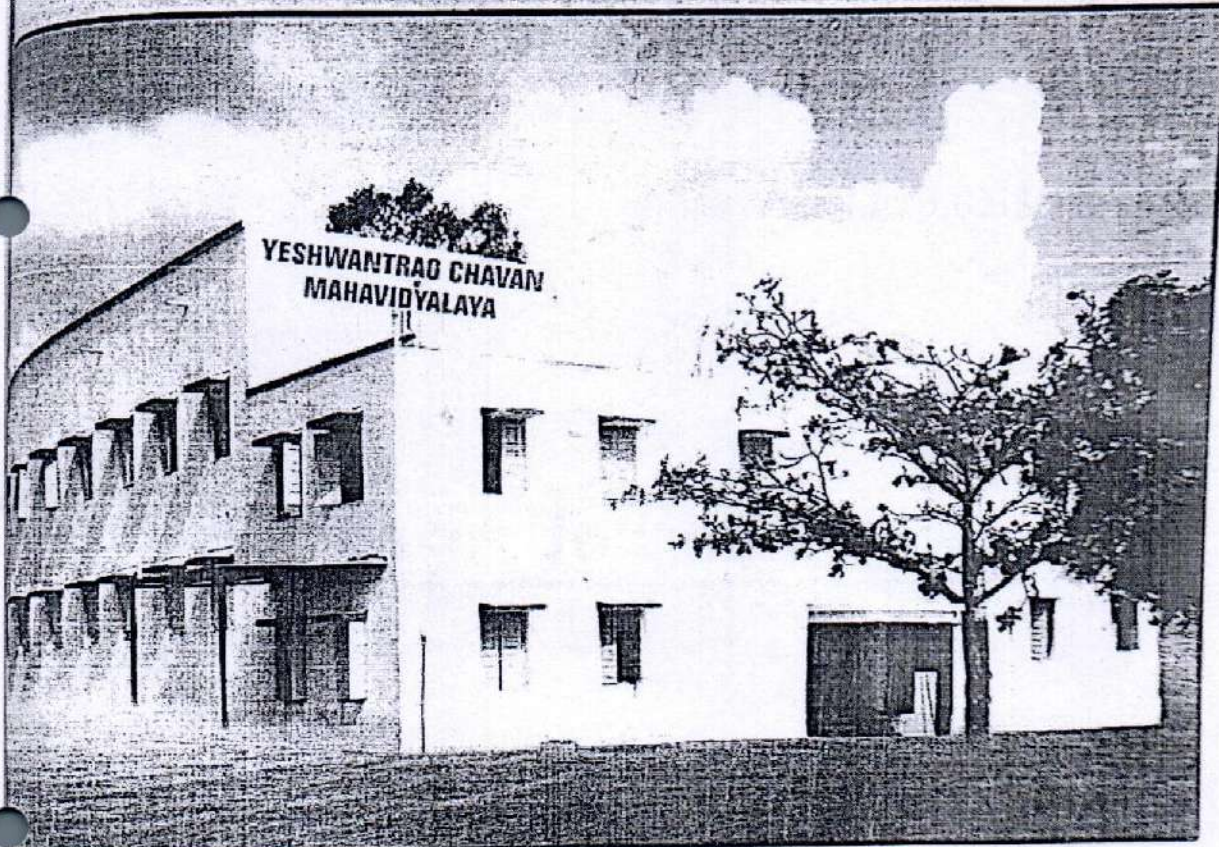


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CONCISE ACCOUNT OF FUNGAL DISEASES ON PULSES: A REVIEW

S.T. Ingale and S. S. Patale

Smt. S. K. Gandhi Arts, Amolak Science and P.H Gandhi Commerce College, Kada,  
Tq. Ashti, Dist. Beed (M.S.)

ABSTRACT

To determine the prevalence of fungal diversity of some important locally available pulses. Some major pulses are selected for the present investigation. These are Pigeon pea *Cajanus cajan* (L.) Millsp., Chick pea *Cicer arietinum* L., Green gram *Vigna radiata* (L.) Hepper., black gram *Vigna mungo* (L.) Hepper., lentils *Lenceculinaris*, Soybean (*Glycine max*) The seed mycoflora of these pulses was observed and screened by using PDA plate method. And we have observed morphological differences and diversity of pathogen. The observed fungus was *Aspergillus niger*, *Aspergillus flavus*, *Alternaria tenuissima*, *A. alternate*, *Fusarium sp.*, *Cladosporium sp.*, *penicillium sp.*, *Macrophomina phaseolina*, *Verticillium sp.*, *Pythium sp.*, *Rhizoctonia Drechslera sp.* etc found on selected legumes.

INTRODUCTION

They are annual plant with herbaceous bushy appearance. The pulses played prominent role in civilization. The country has exported 2, 51,644.32 MT of pulses to the world for the worth of Rs. 1,600 crores during the year 2015-16. The seed of legume are valuable food resources and are considered alternative to meat as they contain protein (20-30%) of dry weight, carbohydrates, fibers, iron, zinc, calcium and acid. There are more than 500 varieties of pulses that plays useful role in soil by an association with nitrogen fixing bacteria by increasing soil fertility. During storage, seed are exposing to infection by microbe and insects.

Identification of fungi associated with such seed give an idea of some of problems faced by seed during the cultivation of the legumes, especially during the growth of seedlings that occur in varying degrees and different species.

Many other proved such infection and its effect on whole plant leading to great economic losses (Burgess et al. (1997), Phan et al. (2002), Yang et al. (2002)). Diseases caused by *Sclerotinia sclerotiorum*, *Sclerotinia minor* are responsible for economically important losses on several crops in eastern Canada including canola, cabbage, carrot, celery, lettuce, snap, bean, soybean, and white beans (Mc Donald and Boland 2004; McLaren et al. 2004). *Ascochyta blight* (AB), caused by *Ascochyta rabiei*, are major disease of chickpea. Several epidemics of AB causing complete yield loss have been reported by Pande et al. (2002). *Botrytis gray mold* (BGM), caused by *Botrytis cinerea* Pers. Ex. Fr., and is an economically important disease of chickpea, especially in areas where cool, cloudy, and humid weather persists. Several epidemics of BGM





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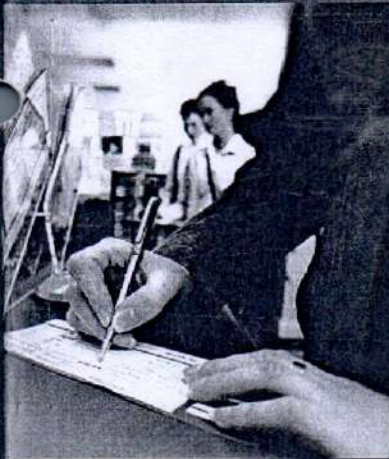
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## Recent Trends in E-Banking

Dr. Markande Madan Rambhau  
Head of Department in commerce  
Gandhi College Kada.  
Tal. Ashti Dist. Beed

### Abstract:

Today most of the banking happens while you are sipping coffee or taking an important call. ATMs are at your doorstep. A huge part of this change is due to advent of IT. Banks today operate in a highly globalized, liberalized, privatized and a competitive environment. In order to survive in this environment banks have to use IT. Indian banking industry has witnessed a tremendous developments due to sweeping changes that are taking place in the information technology. Electronic banking has emerged from such an innovative development. The objective of the present paper is to study and analyze the progress made by Indian banking industry in adoption of technology. The study is secondary based and analytical in nature. The progress in e-banking in Indian banking industry is measured through various parameters such as Computerization of branches, Automated Teller Machines, Transactions through Retail Electronic Payment Methods etc. Statistical and mathematical tools such as simple growth rate, percentages and averages etc are used. The paper also highlights the challenges faced by Indian banks in adoption of technology and recommendations are made to tackle these challenges. The paper concludes that in years to come e-banking will not only be acceptable mode of banking but preferred mode of banking.

**KEYWORDS:** E-banking, Information Technology, Automated Teller Machines.

### Introduction:

Information Technology has become a necessary tool in today's organizations. Banks today operate in a highly globalized, liberalized, privatized and a competitive environment. In order to survive in this environment banks have to use IT. IT has introduced new business paradigm. It is increasingly playing a significant role in improving the services in the banking industry. Indian banking industry has witnessed a tremendous developments due to sweeping changes that are taking place in the information technology. Electronic banking has emerged from such an innovative development. Modern technology is seen as a panacea for most of the ills that the banking sector faces today. Even at present, India is a relative unbanked country as the credit-to-GDP ratio is one of the lowest in the developing economies. So banks are facing the dual challenge of increasing penetration and high growth trajectory. The banking industry can kill two birds with one stone that is with help of technology. Tremendous progress took place in the field of technology which has reduced the world to a global village and it has brought remarkable changes in the banking industry. Branch banking in the brick and mortar mode has been transformed into click and order channel mode.

E-Banking: E-banking is the term that signifies and encompasses the entire sphere of technology initiatives that have taken place in the banking industry. E-banking is a generic term making use of electronic channels through telephone, mobile phones, internet etc. for



## A COMPARATIVE STUDY OF LITERACY IN MALE AND FEMALE FROM AHMEDNAGAR DISTRICT, MAHARASHTRA

**Dr. Sanjay Mahadeo Shinde**

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Smt. S.K. Gandhi Arts,  
Amolak Science & P.H. Gandhi Commerce College,  
Kada, Tal-Ashti, Dist-Beed.

### INTRODUCTION :-

Literacy is an indispensable mean for acquiring skills and improving economic condition. From demographic point of view, literacy is the variable affecting fertility, mortality and migration. Literacy supports for development and population control too. According to census of India 2011, children age (7 Years or below) is treated as illiterate even though they may be going school and can read and write to with understanding in any language is considered as literate. A person who can only read but cannot write is not literate. It is not necessary that to be considered as literate, a or passed any minimum educational standard. Literacy could also have been achieved through adult literacy class of through any non-formal educational system and even who are blind and can read in Braille script are treated as literate. Literacy rate of population is defined as the percent of literate in the age groups even years and above. Literacy rate directly affects services, health, economy, standard of living and overall development of study region. One notable feature of India's population is that the females lag far behind the males in term of literacy. While three but of every four males could read and write of the country, the corresponding figure for the females was about two out of every four. Such male female differentials in literacy were the product of the country's history and its socio economic political milieu. Largely farm based economic setup, general poverty caste based social structures, prejudices against female mobility, education and employment limited facilities for schooling, poor infrastructure in schools, proxy teachers, high incidence of dropouts and child marriage are some of the factors contributing to the slow pace of literacy transition in the country.

### STUDY REGION :-

Ahmednagar District is situated partly in the upper Godavari basin and partly in the Bhima basin, occupying a somewhat central position in Maharashtra state. It located between 18°2' and 19°9' North latitudes and 73°9' and 75°5' East longitudes. The district is

irregular in shape and resembles a slanting cross with a length of 200 kms and breadth of 210 kms. It is surrounded by Nashik district to north, Aurangabad district to the north-east, Beed district to the east, Beed district to the east, Osmanabad and Solapur district to the south, Pune district to the west and Thane district to the North-west.

Ahmednagar is the largest district of Maharashtra. It has total geographical area of 17048 sq. Kms. Which is 5.66% of area of Maharashtra state. Out of total areas 16654.5 sq.k.m. Rural area and remaining 393.5 sq.km. is Urban area. The total population of the district is 4543159 persons as per census 2011 of which male and female were 2342825 and 2200334 for S.S. percent of the total area of the state the district's population constitutes 4.2 percent of the total population of the state. The density of population is 267 persons per sq.km. among all 36 districts of the state the district rank 1<sup>st</sup> in terms of area. The total rural population of the district is 3630542 and urban population is 912617 as per 2011 census. Study region has 69.38 percent literacy. Ahmednagar is centrally located in western Maharashtra. In Ahmednagar District there were 14 Tahsils, 1581 habited villages, 2 unhabited villages and 23 Towns.

### OBJECTIVES :-

The Present paper is an attempt to describe spatial distribution of differential in literacy in the tahsils of Ahmednagar district and to analyze the gender disparity in literacy.

### DADA BASE AND METHODOLOGY :

The study is mainly based on the secondary sources obtained from statistical Handbook, District census Handbook from 2001 and 2011, Socio-economic Abstract of Ahmednagar district. In the present paper, most suitable statistical and cartographic techniques have been applied. The district has been considered as the smallest unit of study. The study is based on 2001 and 2011 census data and male and female literacy rate is calculated by using following formula.

$$FFID = \frac{MLR - FLR}{TLR}$$

Where :

MFID	=	Index of male female differential in literacy.
MLR	=	Percentage of literates in male population.
FLR	=	Percentage of literates in female population.
TLR	=	Percentage of literates in total population.

Result and discussion.

Trends of Male-female population literacy.

**Table 1 : Male-Female population Literacy in Ahmednagar District.**



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## भारतीय समाजावरील जागतिकीकरणाचा प्रभाव

प्रा. भोसले एस. ई.

गांधी महाविद्यालय कडा

(25)

**प्रस्तावना :** मानव हा आपल्या प्राथमिक गरजा भागवण्यासाठी अगदी सुरुवातीपासून प्रयत्न करत आहे. मानवाच्या विकासाच्या प्राथमिक आवस्थेत मानव शिकार आणि कंदमुळे खाऊन अन्नाची गरज, झाडाची साल गुंडाळून वस्त्राची गरज तर गुन्हेत राहून निवाऱ्याची गरज भागवत होता. या आवस्थेत मानवाला दुसऱ्यावर आवलंबून राहण्याची जास्त आवश्यकता नव्हती. परंतु मानवाचा जसजसा विकास होत गेला तसा मानव अनेक कामासाठी दुसऱ्यावर आवलंबून राहू लागला. सुरुवातीच्या काळात मानव आपल्या गरजा आपल्या गावातच भागवत होता. परंतु काळाच्या ओघात मानवाला आपल्या गरजा भागवण्यासाठी दुसरे गाव, दुसरे राज्य, दुसऱ्या देशातूनही व्यापाराच्या माध्यमातून वस्तूची आयात निर्यात करावी लागली. भारताचा प्राचीन आणि मध्ययुगीन काळात दुसऱ्या देशाबरोबर व्यापार सुरू होता. परंतु वाहतूकीच्या अग्रगत साधनांमुळे त्याचे प्रमाण कमी होते. आधुनिक काळात औद्योगिक क्रांती नंतर उद्योगधंद्यात वाढ, वाहतूकीची आधुनिक साधने. यामुळे जगभर व्यापार मोठ्या प्रमाणात सुरू झाला. जग हळुहळु जवळ जवळ येऊ लागले. जगातील वेगवेगळ्या समाजाचा एकमेकांवर प्रभाव पडू लागला. त्याचे काही चांगले तर काही वाईट परिणाम ही झालेले दिसून येतात.

भारतात इंग्रजांच्या कालखंडात तसेच भारतीय स्वातंत्र्यानंतर उद्योग, व्यापार, शिक्षण, यामुळे जगाशी संपर्क वाढत गेला. त्यातून भारतातील वेगवेगळ्या क्षेत्रांवर याचा परिणाम ही झाला. परंतु खऱ्या अर्थाने भारतात १९९१ पासून मुक्त अर्थव्यवस्थेचा स्विकार केल्यापासून जागतिकीकरणाचे वारे वाहू लागले. त्याचे बरे वाईट परिणाम भारतीय समाजावर होऊन भारतात सर्वच क्षेत्रात परिवर्तनाची गती मोठ्या प्रमाणावर वाढली आहे.

### जागतिकीकरणाचा अर्थ :-

जागतिकीकरणाची प्रक्रिया ही सार्वत्रिक आहे. जगातील जवळपास सर्वच देशांवर जागतिकीकरणाचे परिणाम झालेले दिसून येतात. जागतिकीकरण ही एक अशी प्रक्रिया आहे. कोणता देशाच्या अर्थव्यवस्थेला व्यापक अर्थव्यवस्थेचा भाग बनविते. देशातील सर्व प्रकारचे वित्तीय व्यवहार, वस्तूची निर्मिती, सेवा हे व्यापक जागतिक बाजारपेठांचा भाग बनतात. या बरोबरच जगातील सर्वच राष्ट्रांची एकच बाजारपेठ निर्माण करणे व त्यात जगातील साधन सामुग्रीचे आणि भांडवलाचे परिचलन निर्माण करणे म्हणजे जागतिकीकरण होय. अशीही जागतिकीकरणाची व्याख्या करता येईल. वरील व्याख्यावरून असे स्पष्ट होते की जागतिकीकरणात व्यापारावरील निर्बंध कमी करून वस्तूंचे सर्व देशांमध्ये दळणवळण होईल. विविध देशांमध्ये भांडवल हे प्रवाही स्वरूपात असेल तसेच तंत्रज्ञानही प्रवाही स्वरूपात असेल असे वातावरण निर्माण करणे होय. अशा जागतिकीकरणाचा स्विकार भारताने १९९१ पासून करून खुली अर्थव्यवस्था स्विकारली.

### जागतिकीकरणाचे भारतीय समाजावरील परिणाम:-

१९९१ पासून भारताने मुक्त अर्थव्यवस्थेचा स्विकार केल्यामुळे भारतीय अर्थव्यवस्था आणि समाज जागतिकीकरणाच्या प्रक्रियेत ओढला गेला. गेल्या २७ वर्षांत जागतिकीकरणाच्या प्रक्रियेमुळे पायाभूत संरचना, उद्योग, सेवा क्षेत्र यांचा विकास झाला. दुसऱ्या बाजूला कृषी क्षेत्रात म्हणावी तशी सुधारणा झाली नाही. इतर क्षेत्रांच्या मानाने या क्षेत्रात गुंतवणुकीचा कल कमी होता. भौतिक बदल होत असतानाच सामाजिक सांस्कृतिक बदलामुळे भारतातील कुटुंबपध्दती, जीवनशैली, रूढी, प्रथा, परंपरा, धर्म, विवाह, शिक्षण, मनोरंजन, सामाजिक संबंध, राहणीमान, सामाजिक विषमता इत्यादींमध्ये मोठ्या प्रमाणावर बदल घडून आले. जागतिकीकरणामुळे झालेले बदल हे समाजासाठी चांगले वाईट दोन्ही प्रकारचे असलेले दिसून येतात.

### १) भारतीय कुटुंबावरील परिणाम :-

जागतिकीकरणाचा परिणाम पारंपारिक भारतीय कुटुंबावरही झालेला दिसून येतो. तसे पाहता पाश्चिमात्यांच्या भारतावरील आक्रमणापासूनच भारतीय कुटुंब पध्दतीवर परिणाम होत होता. त्याच बरोबर औद्योगिक क्रांती, आधुनिक शिक्षण, नागरीकरण या सर्वांचा ही परिणाम कुटुंबावर झालेला होता. भारतातील पारंपारीक संयुक्त कुटुंब पध्दती ही शेती व्यवसायावर आधारीक होती. जास्त



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## बालकामगार : एक समस्या

प्रा. भोसले एस. ई.

गांधी महाविद्यालय कडा

## प्रस्तावना :

बालकामगार ही भारताबरोबरच जगातील एक प्रमुख सामाजिक समस्या आहे. प्रगत व अप्रगत दोन्ही प्रकारच्या देशामध्ये बालकामगारांचे प्रमाण लक्षणीय आहे. भारतासारख्या विकसनशील व कृषीप्रधान देशामध्ये हे प्रमाण विशेष जाणवते. बालकामगारांची समस्या प्राचीन काळापासून अस्तित्वात नव्हती ती प्रामुख्याने औद्योगिक क्रांतीनंतर अस्तित्वात आलेली समस्या आहे. साधारणपणे कृषी उद्योगाकडून कारखाना उत्पादनपध्दतीकडे अर्थव्यवस्थेच्या उत्क्रांतीच्या टप्प्यावर बालकामगार व्यवस्था विकसीत झाली. उद्योगधंद्यामधून मोठ्या प्रमाणात कामगारांची आवश्यकता भासू लागली तेंव्हा प्रौढ कामगारां बरोबर बालकामगारही आपल्या गरजा भागवण्यासाठी काम करू लागले. ह्या प्रथेमुळे बालकांचे शोषण केले जाते. त्यांची शारीरिक, मानसिक वाढ खुंटते. त्याच बरोबर त्यांचे बालपण ही हिरावून घेतले जाते. त्या मुलाला अकाली प्रौढ बनविले जाते. त्याचे शिक्षण अर्धवट राहते. परीणामी अकुशलता, कमी उत्पन्न, दारिद्र्य अशा दुष्टचक्रात बालकामगार अडकतो.

## बालकामगारांची व्याख्या :-

१. आंतरराष्ट्रीय श्रमिक संघटना :- ज्या मुलांवर सतत प्रौढ व्यक्तिची जबाबदारी आसते, जी मुले त्यांच्या शारीरिक मानसिक विकासाला मारक ठरेल अशा वातावरणात कमी मोबदल्यात काम करतात. जी मुले आपल्या कुटुंबाला दुरावलेली असतात, जी मुले स्वतःच्या उज्ज्वल भवितव्यासाठी आवश्यक ठरेल अशा शिक्षण व प्रशिक्षणास पारखी झालेली असतात. अशा सर्व मुलांना आंतरराष्ट्रीय श्रमिक संघटनेने बालकामगार संबोधले आहे.
२. भारतीय राज्यघटना व बालकामगार कायदा १९८६ नुसार :- ज्या कामगारांनी आपल्या वयाची १४ वर्षे पूर्ण केलेली नाहीत अशा सर्व कामगारांना बालकामगार असे संबोधले आहे.
३. महाराष्ट्र शासन राज्यकृती आराखडा :- बालकामगार म्हणजे १४ वर्षां खालील शाळेत जाणारी आणि बालकामगार कायदयामध्ये नमूद केलेल्या अथवा नमूद न केलेल्या कामामध्ये पूर्णवेळ किंवा अर्धवेळ गुंतलेली सर्व मुले. वरील व्याख्यांवरून असे स्पष्ट होते, १४ वर्षां खालील अशी मुले जी शेती व्यवसाय, उद्योगधंदा, रस्त्यावरील व्यवसाय, सेवाक्षेत्र आणि इतर ठिकाणी आपल्या गरीबीमुळे कामगार म्हणून काम करत असतात. तसेच बालकामगारांमुळे अनेक समस्या निर्माण होत असतात. त्यामुळे बालकामगार आणि समाजाचे ही मोठे नुकसान होत असते.

## भारतातील बालकामगार समस्याचे स्वरूप :-

भारतात इतर सामाजिक समस्यांबरोबरच बालकामगार ही एक महत्त्वाची सामाजिक समस्या आहे. भारतात दारिद्र्याचे प्रमाण जास्त आहे. त्यामुळे आपल्या मुलांचे संगोपन पालकाद्वारे व्यवस्थित न होता बालकांना एखाद्या ठिकाणी काम करावे लागते. भारतात ग्रामीण भागात शेती हा मुख्य व्यवसाय आहे. शेती मध्ये काम करण्यासाठी जास्त माणसांची आवश्यकता असल्यामुळे कुटुंबातील लहान मुलांची ही मदत घेतली जाते. कधी शिक्षण करत-करत शेती व्यवसायात मुलांची मदत घेतली जाते तर कधी पूर्णवेळ मुलांना शेती करावी लागते. शेती बरोबरच गुरांचा सांभाळ करणे, चहामळे, कुटिर उद्योगात मदत करणे, इतरांकडे सालगडी किंवा रोजंदारीवर काम करणे अशी आनेक प्रकारची कामे बालकामगारांना करावी लागतात.

शेती व्यवसाया बरोबरच ग्रामीण भागातून तसेच शहरी भागातून बीडी उद्योग, बांधकाम उद्योग, विटभट्टी, छोटे-मोठे कारखान्यात ही बालकामगार काम करतांना दिसून येतात. याच बरोबर बांगड्याच्या कारखान्यात बालकामगारांचे प्रमाण ही लक्षणीय आहे. शहरी भागातून हॉटेल व्यवसायातूनही मोठ्या प्रमाणात बालकामगार दिसून येतात. तसेच वेगवेगळ्या दुकानातूनही बालकामगार काम करतांना आढळून येतात. तसेच रेल्वेस्थानक, रस्ते याठिकाणी देखील बालकामगार विविध प्रकारची कामे करतांना दिसून येतात. विविध प्रकारच्या खाणीमधूनही बालकामगार आढळून येतात. या बरोबरच मोटार गॅरेज, वाहतूक, फटाके आगरबत्ती, पेट्रोलपंप, मातीकाम, खोदकाम, भंगार जमा करणे, रद्दी जमा करणे, पेपर विकणे, ब्रेड विकणे, बुटपॉलिश, यंत्रमाग हातमाग, हमाली, कत्तलखाना, रंगरंगोटी, छापरखाना इ. सर्व ठिकाणी भारतात बालकामगारांची संख्या मोठ्या प्रमाणात आहे.



## Challenges of Good Governance

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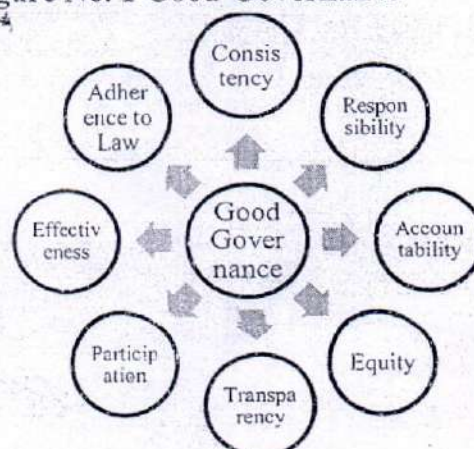
### Introduction:

Good governance concept emerged in 20<sup>th</sup> century, good governance associated with efficient and effective administration in a democratic framework. It is considered as citizen friendly, citizen caring and responsive administration. The concept of good governance emerged mainly because practices of bad governance, characterized by corruption, unaccountable governments and lack of respect for human rights, had become increasingly dangerous and the need to intervene in such cases had become urgent. Good governance has become an important element of the political and economic agendas. The good governance agenda includes promoting transparency, accountability, efficiency, fairness and participation. These values translate into a broad objective to improve political accountability, participation, an effective rule of law, transparency and flow of information between governments and their citizens. Such objectives were expressed further by focusing on the need for democratizing social decisions and ensuring good governance that is accountable and active, government that enjoy the trust and support of their societies.

Within the public management discipline good governance has been regarded as an aspect of the new paradigm in public administration which emphasizes the role of public managers in providing managerial autonomy, particularly by reducing central agency controls, demands, measures and rewards in relation to both organizational and individual performance, recognizes the importance of providing the human and technological resources that managers require to meet their performance targets and is receptive to competition and is open minded about which public purposes should be performed by public servant as opposed to the private sector.

Reducing poverty, strengthening human rights, securing gender equality, realizing the rights of children and youth combating and preventing corruption, improved accountability and greater political participation these are the objectives of the good governance and are essential for fair and sustainable development.

Figure No. 1 Good Governance







## Urbanization in India

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(02)

### Introduction.

Urbanization is one of the common characteristics of economic development with the gradual growth of the economy. The process of urbanization depends on the shift of surplus population from rural to urban area along with the growth of some industrialized urban centers. Due to social and economic pressure people from backward villages started to move toward urbanized centers in search of job, where newly established industries and ancillary activities continuously offer job opportunities to those people migrating to cities.

The year 2008 is a turning point in the history of urbanization, according to the 2007 revision of the world urbanization prospects by the United Nation the global urban population is estimated to have exceeded the global rural population in 2008. The world had a mere 13 per cent of the population living in cities and towns in 1900 and 29 per cent in 1950. The level of urbanization in the world is estimated to have reached 49.4 per cent in 2007, the global urban population is expected to reach about 6.4 billion in 2050, accounting for 70 per cent of the total population on the planet.

Urbanization in India began to accelerate after independence, due to the country adoption of a mixed economy, which gave rise to the development of the private sector. Urbanization is taking place at a faster rate in India. Populations residing in urban area in the India, after 1980 the burden of employment on the agriculture sector are exceeding, due to this village people migrating towards the cities to searching jobs. Indian urban area makes a major contribution to the economy. Indian cities contribute to about 2/3 of the economic output, host a growing share of the population and are the main recipients of FDI and the originator of innovation and technology and over the next two decades are projected to have an increase of population from 282 million to 590 million people<sup>2</sup>. India's town and cities have expanded rapidly as increasing numbers migrate to town and cities in search of economic opportunity.

### World scenario of urbanization:

Nearly 20 years ago, many developing countries with support from development agencies actively implemented policies to reduce migration to large cities; today multilateral and bilateral organizations recommend policies to encourage migration to enable the poor to move from lagging to leading areas, in such a way that governments can help reduce rural poverty by making migration more efficient, as the urban population increases the land area occupied by cities has increased at an even higher rate. Below table shows the world scenario of urbanization

Table No. 1 Average Annual Rate of Change of the urban population

Sr. No.	Region/ Area	1995-2000	2000-2005	2005-2010	2010-2015	1995-2015
1	World	2.13%	2.27%	2.20%	2.05%	2.16%
2	High-income Countries	0.78%	1.00%	1.00%	0.76%	0.88%
3	Middle-income Countries	2.74%	2.77%	2.61%	2.42%	2.63%
4	Low-income Countries	3.54%	3.70%	3.70%	3.77%	3.68%
5	Africa	3.25%	3.42%	3.55%	3.55%	3.44%
6	Asia	2.79%	3.05%	2.79%	2.50%	2.78%
7	Latin America & The Caribbean	2.19%	1.76%	1.55%	1.45%	1.74%
8	Europe	0.10%	0.34%	0.34%	0.33%	0.31%
9	North America	1.63%	1.15%	1.15%	1.04%	1.24%
10	Oceania	1.43%	1.49%	1.78%	1.44%	1.53%

Above table reflects that the rate of urbanization is low in high income countries but in middle income countries and low income countries rate of urbanization is high than high income countries. Africa and Asia regions rate of urbanization is high with compare to Latin America, Caribbean, North America and Europe<sup>3</sup>. It means the



## COMPARITIVE STUDY ON PHYSICO-CHEMICAL AND BACTERIOLOGICAL ANALYSIS OF HARVESTED RAINWATER AND NON HARVESTED GROUNDWATER

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### ABSTRACT

Water Harvesting, an effective remedy on the water crisis, is a method of capturing the rainwater from rooftop and its storage in subsurface groundwater reservoirs. It is a multipurpose way of supplying water in rainwater from rooftops can be used for domestic purposes by storing. In many states where it has made mandatory, the implementation has become successful in water conservation and watershed management. Kada, a village in district Beed of Maharashtra State in India, is in a strongly drought-prone area. It is in this region present studies were undertaken for the conservation of natural rainwater and its storage in either surface water or in tubewells. By constructing Rain Water Harvesting systems at five different locations in Kada, which included schools and some crowded public places, the researcher has found a successful rise in water levels of bore-wells and people enjoying the results. Studies were also carried out to find the water quality and purity of harvested rainwater and was compared with the water quality of non-harvested groundwater in the same vicinity. Water samples from six different sites were assessed for physicochemical analysis and from ten sites for bacteriological analysis. The different physicochemical parameters studied are pH, turbidity, chlorides, nitrates, sulfates, TDS, hardness, alkalinity, iron and fluoride. Researcher assessed potability as per IS 10500 Standards for drinking water quality assessment, and comparative studies showed that water gets more purified naturally when rainwater is harvested.

Keywords: Water crisis, Rainwater harvesting, Physic-chemical analysis, Bacteriological analysis.

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### INTRODUCTION

Rain Water Harvesting is the most sustainable solution on water crisis<sup>1</sup>. It is the most convenient and easily adaptable method for overcoming water scarcity during the water crisis. Rainwater harvesting is a method of collection of rainwater from rooftop catchment and its storage in sub-surface natural reservoirs or tanks before it is lost as surface runoff. One of the most efficient methods of rainwater harvesting is Roof Top Water Harvesting. Efforts should be made to ensure that common man gets efficient pure water, pure air, and pure food. Implementing this fact, it has been decided to procure Rain Water Harvesting system at some public places in Kada town, in district Beed of Maharashtra state in India as Kada is the village where total annual rainfall is very less. Most prominent advantages of RWH includes:

- (a) It can minimize the load and pressure on public water supply which is the main source of water supplies in cities;
- (b) It is cost-effective and efficient method and hence is economically feasible and affordable to common man;
- (c) It increases moisture holding capacity of soil important for development of vegetation\*
- (d) Groundwater level gets increased and highly recharged during rainfall as studied by<sup>1</sup>. RWH can also overcome the problem of the water crisis, it can reduce the load on traditional water sources, and can also alleviate nonpoint source pollutant loads, it can help in controlling climate change impacts, and can contribute to the stormwater management as discussed by E. Eroksuz and A. Rahman, et al<sup>2-6</sup>. The main cause behind the problem of the water crisis is that the consumption and requirement of fresh water have

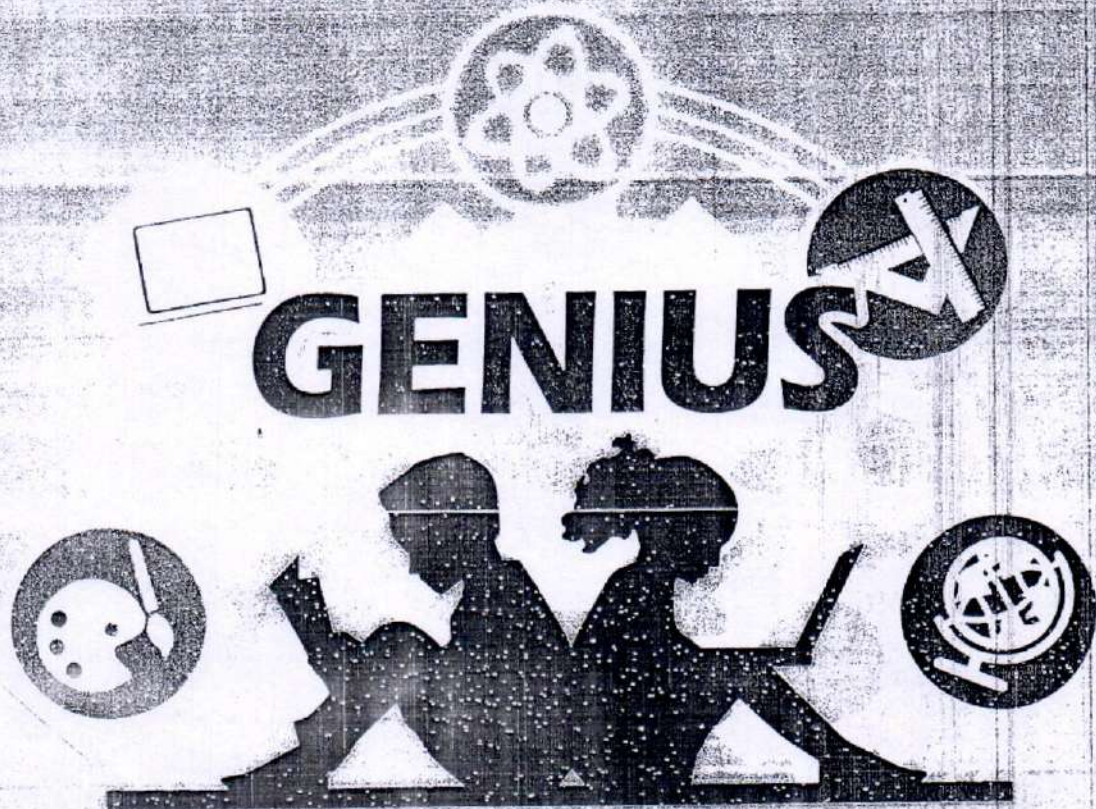




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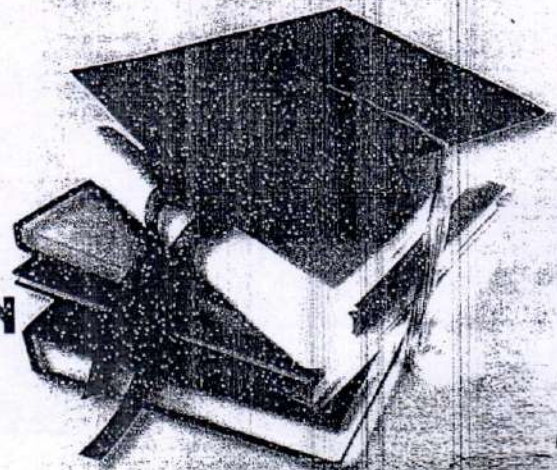


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**AJANTA  
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## 22. Potentiometric Investigation of Complexation of Lisinopril Drug with Transition Metal Ions in Mixed Solvent Media

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### Abstract:

In the present work we investigate the stability constant of Lisinopril hydrochloride drug with transition metal ions Co, Ni, Cu, Zn, and Cd using potentiometric titration technique in 20%(v/v) ethanol-water mixture at 27 °C temperature and at an ionic strength of 0.1M NaClO<sub>4</sub>. {Metal to ligand ratio=1:5 & 1:1} The method of Calvin and Bjerrum as adopted by Irving and Rossotti has been employed to determine proton ligand (pK<sub>a</sub>) and metal-ligand stability constant (logK) values. It is observed that a transition metal ion forms 1:1 and 1:2 complexes.

**Keywords :** Stability Constant, transition metal ions, Lisinopril drug, Potentiometric.

### Introduction

Metal complexes are widely used in various fields, such as biological processes pharmaceuticals, separation techniques, analytical processes etc. To understand the complex formation ability of the ligands and the activity of complexes, it is essential to have the knowledge about solution equilibria involved in the reactions. The extent to which the ligand binds to metal ions is normally expressed in terms of stability. Potentiometric titration is accepted as a powerful and simple electro analytical technique for determination of stability constants. Most of the d-block elements form complexes. There are different kinds of ligand used for complexation. For the present investigation, we selected Lisinopril hydrochloride (2S)-1-[(2S)-6-amino-2-[[[(1S)-1-carboxy-3 phenylpropyl] amino}hexanoyl] pyrrolidine-2-carboxylic acid is an angiotension-converting enzyme (ACE) inhibitor, the enzyme responsible for the conversion of angiotensin I (ATI) to angiotensin II (ATII). It is antihypertensive agent and cardiotoxic agent. It is used for the treatment of hypertension and symptomatic congestive heart failure. It may be used to slow the progression of renal disease in hypertensive patients with diabetes mellitus. Historically, lisinopril



teacher to make awareness through dram and street play about disasters.

### Conclusion

Disaster may occur anywhere, not in multi-hazard prone district, thus it is necessary to get prepared and trained to face such disaster and natural calamities as administrative preparedness is from central to district level through disaster management committee and political presence through these committee are there. General effects of disaster are loss of life, injury, damage and destruction of property, damage and destruction of production, disputation of lifestyle, loss of live-hood, disruption to essential service, damage to national infra structure and general system, sociolo gical and psychological after effect. Role of administration is to serve for people by implementing government policies and planning which is made by central to local bodies to resolve the problems. Here question arise how many people from various parties are serious about natural calamities, if they are not serious, how they give direction to administration? some time work shown only on the paper but actual work is not done, few states are well responding to environmental laws to minimize the possible hazards of disasters and calamities, on the other hand some other have failed in their role. Government where administration, and elected representative are doing their work. As a citizen of country responsibility of people is as important as government to take preventive steps and response to government machinery for better result in disaster phase .In all above role of education is not denied whether it is formal or informal, finally the words of mahatma Gandhi "Nature has enough to satisfy every one`s need But has not enough to satisfy man`s greed".

□□□

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## Disasters in India

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\*\*\*\*\*

### Introduction:

Natural disaster or manmade disasters are common throughout the world. Disaster Continue take place without any warning. They are perceived to be on an increase in their magnitude, complexity, frequency and economic impact. During the 20<sup>th</sup> century more than 300 worst natural disasters occurred in the different part of the world and it's affected more than 1.4 million people. Disaster is a serious event which gives rise to causalities and damage of properties, infrastructure, environment and essential services as well as the economy of the country. Disaster is not new to mankind they have been the constant through inconvenient, of the human being since ancient time. Mainly disasters are two types one is natural disaster and another is manmade disaster, natural disasters like cyclone, earthquake, drought, floods, hailstorms, avalanches, landslides and epidemic<sup>1</sup>. All these disasters are occur in the different part of the world every year some disaster occur reputedly

India is a highly disaster prone country due number of factors both natural and manmade. These are adverse geo-climatic, topographic features, environmental degra dation, population growth, urbanization, industrialization, flawed development practices etc. when we analyze the statistically vulner ability layers, out of 35 state and territories in the country 27 of them are disaster prone. Almost 58.6 per cent of the landmass is prone

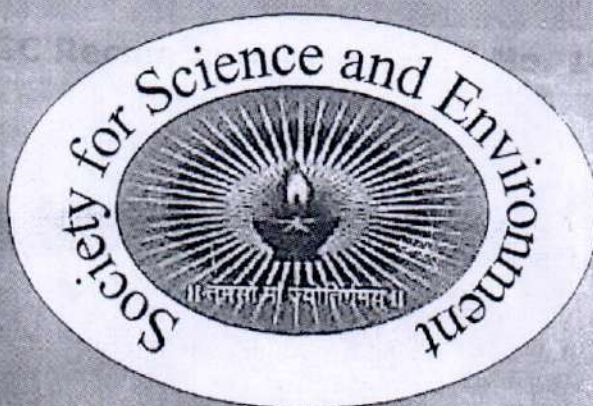


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# ADVANCES IN PHARMACOLOGY AND TOXICOLOGY



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BIOACCUMULATION OF HEAVY METAL (MERCURIC NITRATE) IN TISSUES OF FRESH WATER CRAB, BARYTELPHUSAGUERINI

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The fresh water crab, *Barytelphusagueriniis* a key-species in Marathwada region having good nutritional value and the crab is constantly exposed to heavy metal pesticides, which are used extensively to control agricultural pests. Pesticides of heavy metal salts are common pollutants of freshwater ecosystems where they induce adverse effects on the aquatic biota. Acute toxicity tests were conducted against the pesticides Mercuric nitrate. Higher and lower sublethal concentration of mercuric nitrate were found to be 0.65 and 0.62 ppm respectively for 96 h. It is concluded that the accumulation of heavy metal in the hepatopancreas is found to be exponential in an environment of heavy metal which is commonly used as biocides and fertilizers. Pattern of accumulation in tissues of, Hepatopancreas> Gills > Muscle.

INTRODUCTION

The natural aquatic systems may extensively be contaminated with heavy metals released from domestic, industrial and other man-made activities Conacher *et al.*, (1993). Heavy metal contamination may have devastating effects on the ecological balance of the recipient environment and a diversity of aquatic organisms Farombiet *al.*, (2007). Thus, determination of harmful and toxic substances in water sediments and biota will give direct information on the significance of pollution in the aquatic environment ,Hugget *et al.*, (1973). In aquatic ecosystem, heavy metals are considered as the most important pollutants, since they are present throughout the ecosystem and are detectable in critical amounts. Heavy metals are non-biodegradable and once discharged into water bodies, they can either be adsorbed on sediment particles or accumulated in aquatic organisms.

Crab may absorb dissolved elements and heavy metals from surrounding water and food, which may accumulate in various tissues in significant amounts and shows toxicological effects at critical targets Conacher *et al.*(1993). Edible crab are often contaminated with heavy metals as a result of agricultural technology, industrial pollution, sewage drainage and other sources, which could affect human health and cause chronic



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## Meaning and worldwide Sources of Climate Change

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### Abstract:

The past few decades the hotly debating topic of discussing by not only scientists but the economists as well is about climate change, as it affects the major economic variables touches the life of common man across world. An overwhelming body of scientific evidences indicates that the Earth's climate is rapidly changing, predominantly as a result of increases in greenhouse gases caused by human activities. Climate change will affect the basic elements of life for people around the world access to water, food production, health, and the environment. Many actions can be taken that would greatly reduce greenhouse gasses emissions and or reduce the impacts of greenhouse warming.

**Key Words:** Climate change, Greenhouse Warming, Water vapour. Carbon dioxide,

### 1.0 Introduction:

The hotly debating topic of discussed by scientists, the economists is about climate change, as it affects the major economic variables touches the life of common man across global regions. It has led to the establishment of many governmental and non-governmental organizations to cater for the challenges and address the issues for the survival of human species and other resources. Climate change presents a unique challenge for economics: it is the greatest example of market failure we have ever seen. The economic analysis must be global, deal with long time horizons, have the economics of risk and uncertainty at its core, and examine the possibility of major, non-marginal change. Analysing climate change requires ideas and techniques from most of

the important areas of economics, including many recent advances.

As a result, an enhanced greenhouse effect is trapping more of the sun's heat near the earth's surface and gradually pushing the planet's climate system into uncharted territory.

The United Nations panel, which groups 2,500 scientists from more than 130 nations, predicted more droughts, heat waves and a slow gain in sea levels that could continue for more than 1,000 years even if greenhouse gas emissions were capped. The panel's report predicts a "best estimate" that temperatures would rise by between 1.8 and 4°C in the last of 21st century.

### 2.0 Objective:

This paper, explains the term "climate Change" and the sources of climate change.

### 3.0 Database and methodology:

In this paper secondary data is used with the help of websites and related literature.

### 4.0 Meaning of the Climate change:

Climate" refers to the average weather in terms of the mean and its variability over a certain time-span and a certain area. Classical climatology provides a classification and description of the various climate regimes found on Earth. Climate varies from place to place, depending on latitude, distance to the sea, vegetation, presence or absence of mountains or other geographical factors. Climate varies also in time; from season to season, year to year, decade to decade or on much longer time-scales, such as the Ice Ages. Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forcing or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

### 5.0 Sources of Climate Change:

Human economic activity is causing the release of certain pollutants (atmospheric trace gases-mainly carbon dioxide, methane, nitrous oxide and CFSs) which tend to block the emission of heat



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**ATMOSPHERIC CONCENTRATION OF CERCOSPORA SPORES OVER SUNFLOWER**

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**ABSTRACT**

Present paper deals with the aerobiological investigation over Sunflower fields by using automatic continuous Tilak Air Sampler was employed for exploring fungal airspora over a sunflower field at Kada, Tal. Ashti and Dist. Beed. 1<sup>st</sup> July to 30<sup>th</sup> September 2002 for first Kharif season and from 5<sup>th</sup> July to 30<sup>th</sup> September 2003 for second Kharif season. The present paper deals with the airborne concentration of *Cercospora* spores over sunflower fields. The concentration of *Cercospora* spores was assessed and the roles of the metrological parameters over the spore concentration were discussed. The spore concentration was maximum (1470<sup>m<sup>3</sup></sup> and 5138<sup>m<sup>3</sup></sup> of air) in the month of July 2003 and September 2003 during first and second Kharif season respectively.

Figure: 00      References: 08      Table: 00

Keywords: Aerobiology, *Cercospra*, Air Sampler, Sunflower field.

**Introduction**

Aerobiology is an interdisciplinary science which deals with the study of biological component like pollen grains, fragments of spores, hyphal fragments, bacteria, algae, lichens, minute insects & insect protozoancyst, etc. In the atmosphere a particulates & gases affecting living organisms have been recently included in the concept of aerobiology. The aerobiological studies are mainly concern with the relationship between the biological component in the atmosphere, source of biological component, their release in the atmosphere, their deposition & impact on health of plants & animals including human beings. Airborne infections & the resulting diseases threaten the lives & productivity of plants. Airborne diseases still pose a challenge to mankind.

The role of fungi in causing diseases on crop plants, man, domestic animal, in causing deterioration of food grains in storage, valuable monuments has been subject of great interest for long time. Standing vegetation has a great influence of Aerospora in any place and it changes with changes in

weather. Aerobiological survey conducted in various part of India revealed richness of Aerospora.

Sunflower (*Helianthus annus* L.) is one of the most important oil seed crops being grown all over the world. It is mainly grown for its oil, which is generally for culinary purposes in preparation of vanaspati and in manufacture of soaps and cosmetics. The sunflower oil is chemically a tri-glyceride. It contains 68% linolic acid, so it is especially recommended for patients having heart troubles. Sunflower seed cake or meal is a protein reach feed and is used as a concentrate for cattle, animals like pig, sheep, goat and poultry feed. Sunflower is native of North America. In Germany and Russia it is grown on large scale. Now a day's sunflower crop cultivation has become more popular among the farmers of Marathwada region. As considering survey of this crop that since last few years sunflower is subjected to various type of fungal diseases which may be soil borne, seed borne, airborne etc. The aim of present study was to find out the atmospheric concentration of *Cercospora* and its



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ATMOSPHERIC COCENTRATION OF NIGROSPORA  
SPORES OVER GREEN GRAM FIELD

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Tq. Ashti, Dist. Beed (M.S.)

ABSTRACT

The present paper deals with airborne concentration of *Nigrospora* spores over a green gram field for one kharif season i. e. season from 5<sup>th</sup> June to 28<sup>th</sup> August 2007 using continuous Volumetric Tilak Air Sampler concentration of airborne *Nigrospora* spores was assessed and the role of the Metrological Parameters over the spore concentration were discussed. The spore concentration was maximum (5250/m<sup>3</sup>) in the month of July 2007 and minimum (2394/m<sup>3</sup>) in August 2007. Metrological parameters such as Rainfall, Relative humidity, Wind velocity and temperature showed significant effect on liberation of spores of *Nigrospora* in the airspora composition qualitatively and quantitatively.



**KEY WORDS:** Fungal spores, Green Gram field, Air Sampler, Air borne microbes.

INTRODUCTION

Aerobiology is an interdisciplinary science which deals with the study of biological components like pollen grains, fungal spores, hyphal fragments, viruses, algae, lichens, plant seeds and other propagules minute insects and insect's parts in the atmosphere. The role of fungi in causing diseases to crop plants, man, domestic animals, in bringing about deterioration of food grain in storage, valuable monuments has been subject of great interest for long time. Standing vegetation has a great influence on airspora of any place and it change in weather. Aerobiological survey conducted in various parts of India revealed the richness of airspora. Green gram (*Phaseolus aureus* Rorb.) is one of the most important pulses crop in Marathwada region. Pulses are being grown India since ancient time. It is believed that Green Gram is native of India and Central Asia. Green gram is protein rich staple food. It contains about 2.5% proteins. As considering the survey of this crop that since last few years green gram is suffer with different types of pathogenic disease like Fungi, bacteria, viruses.

In India green gram is affected by various fungal diseases such as leaf spot caused by *Alternaria tenuissima*, *Cercospora*, *conescens*, leaf web blight caused by *Rhizoctonia solani*, Powdery Mildew caused by *Erysiphe polygoni*, Dry root caused by *Macrophomina phaseolina*, Rust caused by *Uromyces phaseoli*, Anthracnose caused by *Glomerella lindemuthiana*. Seed and seedling root caused by *Rhizoctonia solani*, etc. Due to this disease plant yield and poor quality of pods and seeds. This decreases product and valuation. It has been reported that other legume crop diseases. G. Rangaswami (1966).

It was with the aim to find out the important airborne pathogens, their distribution and seasonal variation in the concentration these investigations were undertaken, the prediction of airborne fungal disease





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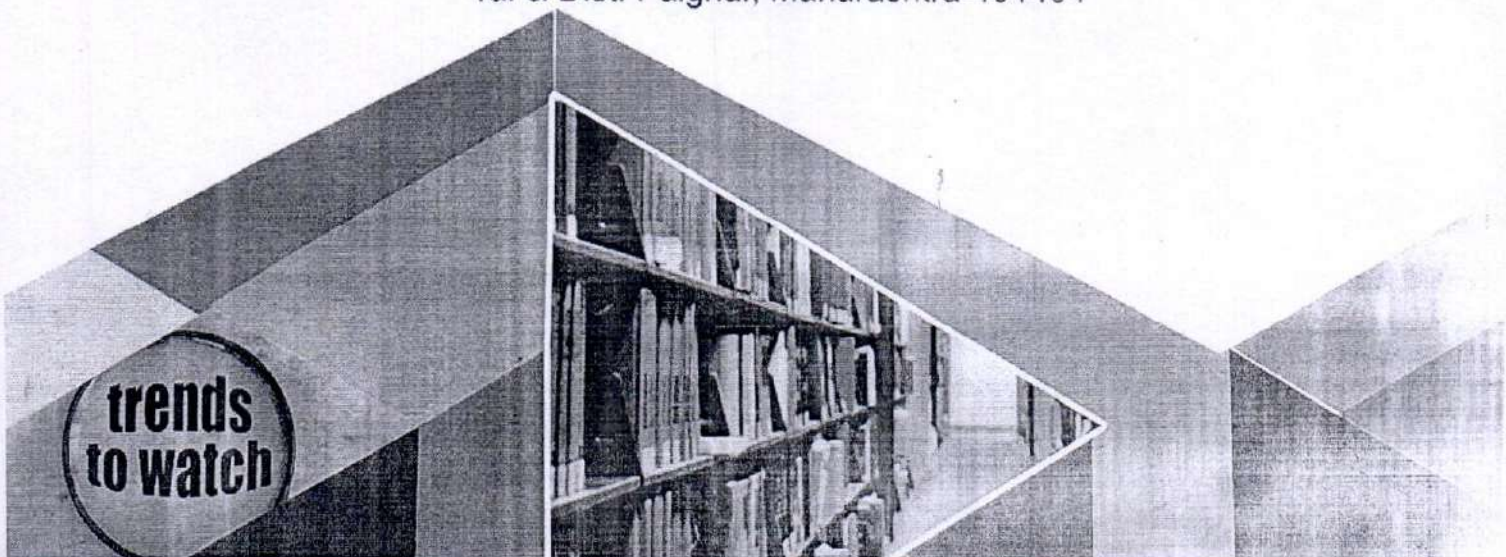
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**EMERGING TRENDS AND TECHNOLOGIES  
IN LIBRARIES: AN INNOVATIVE SPACE**

Wednesday 28th March, 2018

**SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE  
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## GREEN LIBRARY

Dr. Rajkumar Thorwe  
Librarian,  
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\*\*\*\*\*

The green library or sustainable library is a new concept and it is gaining popularity among the library professionals. The paper highlights the conditions of environment, their impacts on society and efforts of leading organizations towards an eco-friendly earth, developed standards for the betterment, green India, green library, role of a librarian, features of green library, Initiatives in India and outside India. The papers also discuss role of initiatives like United Nations Development Programme (UNDP), IGBC (Indian Green Building Council) and LEED (Leadership in Energy and Environmental Design). It is also give an overview of green library and role of modern librarian to make green library. Furthermore the paper focus the importance of green library in ongoing era and green library initiatives in India like Madras University Library, Karnataka university library Dharwad, Mumbai university library and Anna Centenary Library has been trying to make a successful green library.

**Keywords:** Green Library, Sustainable Library, Green librarian, LEED, IGBC, Green Library Movement, Indian libraries

### Introduction

With the advancement of modern technology, life styles of human being towards development are in a rapid speed. Now the demand and its qualitative supply should reach within a fraction of second. The curiosity and interest in technological innovations are in a running position to fulfil the unending demands. So in between this we are lapse something

important which should be recognized before sustainable development and this indefinite productive development can only be possible to make our environment a sustainable one. The word Green has a great importance here for a healthy survives. Over the past few years there are increasing interest towards green revolution in every sector and library is one of them. The climate change issue became heavy on dependents specially people of around world. So to reduce the problem there are many research and developments are going on, many scientists are work on different projects to overcome these issues.

### Green library:

The green library movement emerged in the early 1990s and it is gaining popularity in the field of library and information science profession. The library professional also trying to develop such a kind of library that will be minimize the electricity consumption, energy efficient and environment friendly. Though it is not applied completely in library fields but still we are in a growing position. There is no need to give extra stress in mind to understand green library. Green or sustainable libraries are the structure that is designed, built, renovated, operated, or reused in an ecological and resource efficient manner (Anonymous, 2008). It's a collective effort of all mankind to make green planet by reducing global warming. The Online Dictionary of Library and Information Science (ODLIS) define green library "green/ sustainable libraries as a library designed to minimize negative impact on the natural environment and maximize indoor environmental quality by means of careful site selection, use of natural construction materials and biodegradable products, conservation of resources like water, energy, paper, and responsible waste disposal recycling, etc."

### Green India:

It is become a hustle and bustle concept now and not only library but also every sector





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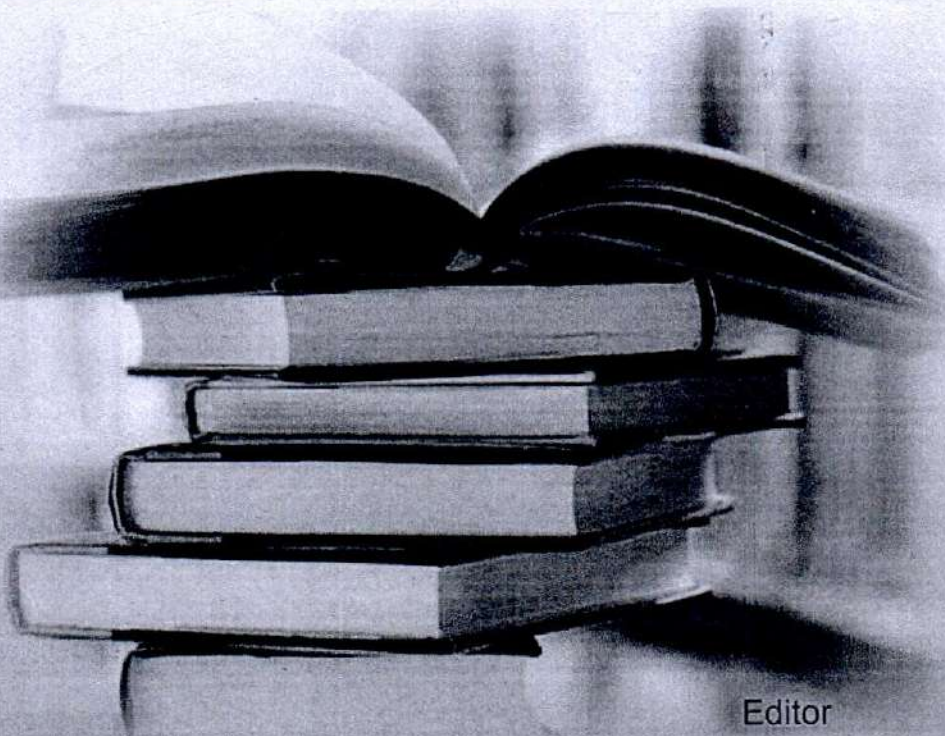
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# Literature and Social Issue



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## भारतीय संविधान : अपेक्षित लोकशाही आणि वास्तविकतेचा राजकीय अभ्यास

प्रा. डॉ. गोंदकर तुकाराम दत्तात्रय,  
गांधी महाविद्यालय,  
कडा. जि.बीड.

\*\*\*\*\*

भारतात स्वातंत्र्यप्राप्तीनंतर संविधान निर्मितीची प्रक्रिया सुरू झाली. त्यासाठी संविधान समिती स्थापन करण्यात येऊन त्याद्वारे जवळपास तिन वर्षांच्या अथक परिश्रमानंतर भारतीय संविधानास पुर्णत्व प्राप्त झाले. हे संविधान निर्माण करतांना भारतातील सामाजिक, आर्थिक, राजकीय आणि धार्मिक परिस्थितीची जाणीव डोळ्यासमोर ठेऊन सर्वांथनी लागु पडेल असे संविधान निर्माण करण्यावर भर देण्यात आला. या संविधानानुसार भारतात खऱ्या अर्थाने २६ जानेवारी १९५० पासून लोकशाही प्रक्रियेस सुरुवात झाली या दृष्टीकोनातून भारतीय लोकशाहीस आज जवळपास सात दशके पूर्ण झाली या सत्तर वर्षांच्या कालखंडात भारतीय संविधानाद्वारे ठरविण्यात आलेला उद्देश सफल झाला आहे काय? भारतीय संविधानास अपेक्षित लोकशाहीचे मार्गक्रम होत आहे काय? परंतु या बरोबरच आजच्या सामाजिक, राजकीय आर्थिक आणि धार्मिक लोकशाहीची नेमकी वास्तविकता काय आहे याचा आढावा प्रस्तुत शोधनिबंधा द्वारे घेण्यात आला आहे.

शोध निबंधाचे उद्देश :

१) भारतीय राज्यघटनेच्या निर्मितीच्या उद्देशाचा अभ्यास करणे.

२) भारतीय राज्यघटनेला अभिप्रेत असणाऱ्या लोकशाही विषयी चिंतन करणे.

३) अशा लोकशाहीप्रत जाण्यासाठीचे मार्गक्रमण

होत आहे काय? याचा आढावा घेणे.

भारतीय संविधानाची प्रस्तावना :

कोणत्याही प्रकारच्या राज्यघटनेत राज्यघटनेचे उद्देश किंवा त्याविषयीचे मुळ प्रयोजन स्पष्ट करण्यासाठी प्रस्तावनेचा समावेश केला जात असतो. भारतीय राज्यकारभाराची दर्शनीय विचारधारेच्या स्वरूपात राज्यघटनेत प्रस्तावना समाविष्ट करण्यात आली आहे. प्रस्तावनेतच भारतीय लोकशाहीचे चित्र स्पष्ट होते. प्रस्तावनेत सामाजिक, आर्थिक, राजकीय न्याय, विचार, अभिव्यक्ती तसेच धर्मस्वातंत्र्य त्याबरोबरच समान संधी, समान न्याय अशा महत्वपूर्ण तत्वांचा समावेश करण्यात आला आहे. राज्यघटनेत प्रस्तावनेचा समावेश करताना घटनाकारांची अशी अपेक्षा होती की, राज्यघटनेतील एखादी बाब सुस्पष्ट होत नसेल तर अशा अस्पष्ट बाबींच्या व्याख्येसाठी प्रस्तावनेचा उपयोग महत्वपूर्ण ठरू शकतो. याबरोबरच समाजातील कु-प्रथा नष्ट करून समाजास विकासाच्या दिशेने अग्रेसर करण्यासाठी तसेच भारतीय लोकशाहीची दिशा स्पष्ट करण्यासाठी भारतीय राज्यघटनेत लोकांच्यासाठी ही प्रस्तावना लागु करण्यात आली आहे. समाजात राजकीय, सामाजिक, आर्थिक अशा स्वरूपाची लोकशाही प्रस्तापित केली जावी हा प्रस्तावनेमागचा उद्देश आहे. या माध्यमातून समता,बंधुता आणि न्याय समाजात प्रस्थापित व्हावा. अशा प्रकारची लोकशाही निर्माण व्हावी. हा प्रस्तावनेचा प्रमुख हेतू होता.

मार्गदर्शक तत्वे :

भारतीय राज्यघटनेच्या चौथ्या प्रकरणातील कलम ३६ ते ५१ तसेच ३५५ या मध्ये मार्गदर्शक तत्वांचा समावेश करण्यात आला आहे. केंद्र व राज्य सरकारकडून प्रत्यक्ष कार्य करित असताना कोणते धोरण स्विकारावे व लोकशाही यशस्वी बनविण्यासाठी, लोकहिताचे कार्य करण्यासाठी कोणता मार्ग अवलंबविला जावा त्याबाबत मार्गदर्शन करण्याच्या दृष्टिकोनातून मार्गदर्शक तत्वांचा समावेश राज्यघटनेत करण्यात आला आहे. या मार्गदर्शक तत्वानुसार भारतातील नागरीकांचा सामाजिक, आर्थिक, आणि राजकीय दर्जा उंचविण्यासाठी आवश्यक असणाऱ्या बाबींचा अवलंब सरकारकडून केला जावा अशी अपेक्षा



01

## STUDY OF AQUATIC ENTOMOLOGICAL INSECT FAUNA AND DIVERSITY IN RURAL FRESH WATER BODIES OF DAVINIMGON DISTRICT BEED (M.S) INDIA

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\*\*\*\*\*

### Abstract:

The water, a universal solvent occupies the first place in the priority list of the life on our planet, the earth. The water is one of the most basic elements in the environment to constitute the universe as an essence of life. Thus water, the unique component of nature plays an important role in the life from molecules to man, hence since the time immemorable the great human civilization has originated, evolved and flourished around the water resource.

About seventy one percent of water surfaces covered with water. The water spread area in India is about 4.5 million hectares. The major habitats in fresh water include the lotic bodies (Rivers and streams), lentic bodies (Ponds and lakes) ground water zones and of ecotonal water bodies where aquatic habitats meet. (E.g. wet lands, marshes and estuaries) (Palmer et. al. 1997) Manmade lakes and reservoirs are becoming very important water resources throughout the world because of the primary concern of man were thought to be for meeting his basic food requirements. The fresh

water aquatic insects inhabit reservoir, streams, and lakes reservoirs. The insects are the most diversified group and plays and major role in lentic as well as lotic food chain of fishes, other animals such as birds. Insects are also being the indicators of human interference and water pollution of the water bodies.

The present investigation was done during January 2016 to May 2016. The four sampling sites were selected for the sampling of water with aquatic insect nets of various sizes. Total 748 aquatic insects were collected during the study time belongs to 6 orders and 15 families.

**Key words:** Aquatic Insect, Diversity, Rural Fresh Water Bodies Davinimgon, Dist. Beed.

### Introduction:-

Insect surpasses all other both in number of their ecological distribution. They undergo an adaptive radiation for aerial, aquatic, terrestrial, and parasitic environment with every considerable ecological niche. Man and Insects have been at war for the same food and same place to live. They attack man and his domestic animals by causing disease, they destroy his property and his crop hence they are very great importance to human. Insects are dominating animals in the world. they occur all over the globe from Antarctica to the tropics, in air, in water even in deep sea, on land even in deserts, in caves and on the mountains.

In terms of mega biodiversity India is ranked 9<sup>th</sup> position in world (Mittermeier & Mittermeier, 1997). Aquatic insects show a multitude of clever refinements. Almost all the more important orders of insects are represented in the wet elements. Only a few species spend their lives uninterruptedly in water. Some live out of water only as pupae. But major pass through their developmental stages in water and adult respire in air. The water quality is also dependent on the presence and absence of some insects in the water bodies. Some insects in the waterbodies either



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## PERCENTAGE TO CONTROL EFFICACY OF LEAF EXTRACT AGAINST BRINJAL DISEASES

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### ABSTRACT

The Brinjal consist of different fungal diseases to control we are using different leaf extracts which affects to the plants growth and yield in a best of genetic potential. Wilt is an important disease of brinjal crop causing significant reduction in yield. In present study, the pathogenic fungus was isolated from infected plant parts and identified based on morphological and cultural characters as *Fusarium Solanif.sp, solanigenae*. The *in vitro* efficacy of different plant extracts viz, *Cardiachindica*, *Argemonemexicana*, *Datura stramonium*, *Ipomoea fistulosa* were tested to control brinjal wilt pathogen. Different concentrations 5, 10, 15 and 20% of plant extracts was used in the study. All the plant extracts showed significant reduction in the growth of pathogen. Among the different extracts 20% of *Cardiachindica* was found most effective followed by *Argemonemexicana*, *Datura stramonium*, *Ipomoeafistulosa*.



**KEY WORDS:** pathogen, fungal diseases, leafextract, efficacy etc.

### INTRODUCTION

Brinjal or eggplant (*Solanum melongena*L.) is an important crop of sub-tropics and tropics. The name brinjal is popular in Indian subcontinents and is derived from Arabic and Sanskrit whereas the name eggplant has been derived from the shape of the fruit of some varieties, which are white and resemble in shape to chicken eggs. It is also called aubergine (French word) in Europe. The egg plant is native of India. Brinjal is grown as an important vegetable crop in all over world. It is grown in India over an area of 0.4 million hectares with an annual production of 7.8 million tonnes Hossain KS and Bashar MA (2011). Among the different diseases that attack brinjal crop, wilt has become a major disease causing significant reduction in yield. The wilt of brinjal is characterized by yellowing of foliage drooping of apical shoot to ultimate death of whole plant. The pathogen is a soil inhabiting fungus and forms in the senescing tissues of the diseased plant and may survive in the soil for many years. There are many methods which are presently being used to control various plant pathogens including wilt pathogen such as physical, chemical, biological, cultural etc. Effective and efficient management of crop disease is generally achieved by the use of synthetic pesticides [2]. Due to increased awareness about the risks involved in use of pesticides, much attention is being focused on the alternative methods of pathogen control. The spiraling up cost chemical fungicides particularly in those countries where pesticide are imported. pollution to soil, water, air by the accumulation of obnoxious chemicals residues due to continuous use of fungicides and development of resistance races to these chemicals



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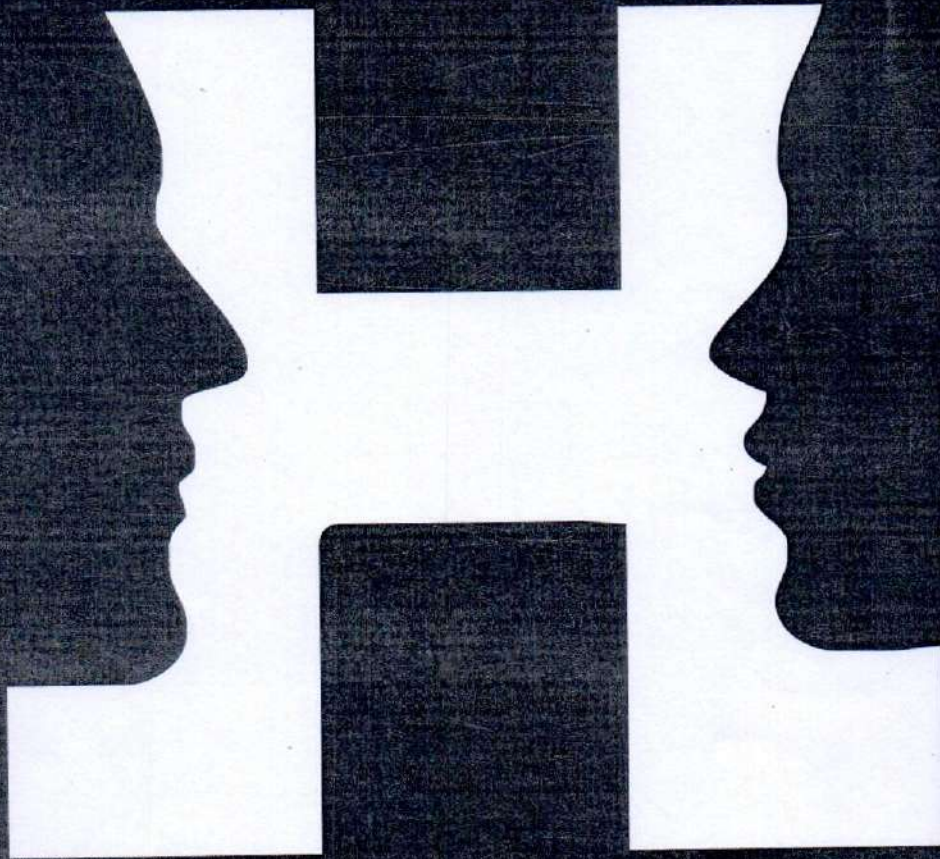


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## 23.

## 1919 च्या कायद्याचा राजकीय अभ्यास

प्रा. गोंदकर तुकाराम दत्तात्रय

गांधी महाविद्यालय,

कडा जि.बीड.

बटीशांनी भारतावर दिडशे वर्षे राज्य केले या कालावधीत त्यांनी भारतावरील आपल्या राजवटीत अनेक कायदे केले. त्यात प्रामुख्याने 1861, 1902, 1909 1919, आणि 1935 या कायद्यांचा उल्लेख करता येईल. यापैकी 1919 च्या कायद्यापासून भारताच्या राजकीय विकासाचा संवैधानिक विकासाचा श्रीगणेश झाला असे म्हटल्यास वावगे ठरणार नाही. त्यामुळे भारताच्या राजकीय दृष्टीकोनातून या कायद्याचे आगळे गळे स्थान आहे. या कायद्यास मॉटफोर्ड सुधारणा कायदा असेही संबोधले जाते. तात्कालीन भारत सचिव मॉन्टेग्यु यांनी 20 ऑगस्ट 1917 रोजी आपल्या भाषणात म्हटले होते की 'भारतीयांचा सहभाग वाढविण्याच्या दृष्टीकोनातून ब्रिटीश शासन विचार करीत आहे. अधिकाधिक जबाबदार शासनपध्दती भारतात लागू व्हावी, या धोरणाप्रमाणे ब्रिटीशांकडून प्रयत्न करणार असल्याचे सुतोवाच त्यांनी केले. यावरून भारतातील राजकीय सुधारणांना सुरुवात होणार होती. त्याप्रमाणे मॉन्टेग्यु यांनी भारतात येऊन नोव्हेंबर 1917 मध्ये लॉर्ड चेम्सफोर्ड आणि भारतातील उच्च अधिकारी आणि पुढारी यांच्याशी चर्चा करून एक उच्चस्तरीय समिती स्थापन केली. या समितीत विल्यम डयुक, भुपेंद्रनाथ बसु आणि ब्रिटिश सांसद चार्ल्स रॉबर्ट हे होते. या सर्वांनी मिळून एक कायद्याचा मसुदा तयार केला. या मसुद्याप्रमाणे 1918 साली कायद्यास पुर्ण स्वरूप देण्यात आले या मसुद्याच्या आधारे 1919 चा कायदा लागू करण्यात आला. या कायद्यानुसार भारतात घडून आलेल्या राजकीय बदलाचा आढावा प्रस्तुत शोध निबंधात घेण्यात आला आहे.

शोध निबंधाचे उद्देश :

- 1) ब्रिटीश काळातील राजकीय स्थितीचा आढावा घेणे.
- 2) 1919 च्या कायद्यातील तरतूदींचा परामर्श घेणे.
- 3) 1919 च्या कायद्याच्यामुळे भारतातील राजकीय बदलाची चिकित्सा करणे.

भारत सचिव मॉन्टेग्यु यांनी ब्रिटीशांचे धोरण स्पष्ट केले होते. त्यानुसार काही प्रमाणात भारतीय राजकीय क्षेत्रात काही बदल निश्चितपणे घडून आले

त्याचे विवरण पुढील मुद्यांच्या आधारे स्पष्ट करता येईल.

1) भारत सरकारमधील बदल :

1919 च्या कायद्यानुसार व्हाईसराय कौन्सिल मधील 8 सदस्यापैकी 3 सदस्य भारतियांमधून नियुक्त केले जाणार होते. तसेच भारतातील अनेक विषयांना केंद्रीय आणि प्रांतिय स्तरावर वाटण्यात आले होते. त्यातील स्थानिक स्वराज्य, आरोग्य, शिक्षण, वैद्यकिय, प्रशासन, भूमीकर प्रशासन, पाणीपुरवठा, दुष्काळी मदत, शांतता व सुव्यवस्था, कृषी इत्यादि महत्वपूर्ण विषयांवर प्रांतिय सरकारला निर्णय घेण्याचा अधिकार देण्यात आला. तसेच केंद्रीयस्तरावर परराष्ट्र व्यवहार, संरक्षण, संचार व्यवस्था, डाक व तार, दिवाणी व फौजदारी कायदे इत्यादी विषय केंद्रीय सरकारकडे कायम ठेवण्यात आले. या सर्व विषयांशी संबंधित चर्चा करण्याचा अधिकार सदस्यांना देण्यात आला होता मात्र अंतिम सत्ता गव्हर्नर जनरलच्याच हाती होती. गव्हर्नर जनरलचे कॉन्सिलच्या सदस्यांवरही पूर्णपणे नियंत्रण होते.

2) केंद्रीय कायदे मंडळातील बदल :

या कायद्यानुसार अस्तित्वात असलेल्या कोणत्याही कायद्यात बदल करण्याचा किंवा तो रद्द करण्याचा अधिकार कायदे मंडळाकडे होता. परंतु सदस्यांना स्थगन प्रस्ताव मांडण्याचा किंवा पुरक प्रश्न विचारण्याचा अधिकार देण्यात आला. या कायद्याने केंद्रात जबाबदार सरकार नव्हेतर दाद देणारे सरकार अस्तित्वात आले. या कायद्यातील तरतुदीमुळेच कायदे मंडळातील काही सदस्यांना स्थायी समिती, अर्थ समिती, सार्वजनिकलेखा समिती यावर नियुक्त करण्यात आले. ज्यामुळे ते सरकारी धोरणाला प्रभावीत करू शकत होते.

3) प्रांतिय सरकारातील बदल :

या कायद्यामुळे प्रांतिय प्रशासनात अत्याधिक महत्वपूर्ण बदल घडून आले. मॉटफोर्ड अहवालानुसार सर्व प्रथम प्रांतात जबाबदार सरकार स्थापना होण्यासाठी प्रयत्न झाला पाहीजे त्यात आपली जबाबदारी ओळखून प्रांताना अधिक अधिक स्वायत्तता दिली जावी अशी भावना व्यक्त करण्यात आली होती.





## Antifungal Activities of Marine Polychaetes *Namalycastis fauveli*

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### ABSTRACT

The crude extract of polychaete *Namalycastis fauveli* was screened for its Antifungal activities. Extracts were obtained from the whole body tissues of the animals to test against different pathogenic bacteria (*Escherichia coli*, *Staphylococcus aureus* and *Salmonella typhi*). The crude extracts were also fractionated and elutions were made with methanol. Eluted fractions were assayed for Antifungal activity followed the disc diffusion method. In polychaete *Namalycastis fauveli* fraction I (66%), the zone of inhibition against *Staphylococcus aureus* is significantly ( $P < 0.05$ ) recorded. In case of *Bacillus subtilis*, it is significantly ( $P < 0.05$ ) observed in fraction I, V, and VI (31%) and III (21%), IV (12%) and fraction VII (7.81%). The zone of inhibition of *E. coli* is significant ( $P < 0.05$ ) observed in fraction VII (27%).

**Keywords:** Antimicrobial activities; Polychaetes; *Namalycastis fauveli*

### INTRODUCTION

A number of terrestrial and marine organisms are used to fend off a wide range of microorganisms including bacteria and fungi by employing "Anti-Microbial Peptides (AMPs)". These AMP's are ribosomally synthesized from proteinogenic amino acids. In marine invertebrates AMPs are a primary component of innate immune mechanisms. Naturally occurring peptides are either synthesized by ribosomal machinery from 20 proteinogenic amino acids or by large enzymes and enzyme complexes called Non-Ribosomal Peptide Synthase [1]. Antimicrobial peptides (AMPs) that involved in marine invertebrate immunity are ribosomal peptides (gene-encoded peptides) and classified into: a) linear  $\alpha$ -helical peptides, b) peptides with intramolecular disulfide bridges, c)  $\beta$ -sheet and small proteins, and d) peptides with one or two predominant amino acids [2-6]. The majority of AMPs are amphiphilic and cationic containing both hydrophilic and hydrophobic surfaces showing antimicrobial activity by forming pores in microbial membranes or disrupting membranes [5-7]. A total of 1,518 AMPs are listed in the second version of Antimicrobial Peptide Database, among which 442 peptides are antifungal [8]. Non-ribosomal peptides are found in sponges, molluscs and tunicates that are composed of unusual amino acids including D-amino acids and contain organic acids in addition to amino acids as cases of depsipeptides. These exhibits a wide range of biological activities such as antimicrobial, cytotoxic, and enzyme inhibitory.

Marine polychaetes (phylum Annelida) are useful to treat several patho-physiological conditions such as arthritis, osteoporosis, bone cancer etc. The bioactive compound has been isolated from a marine annelid, *Arenicola marina* by Mynderse [9]. The compound arenicins are 21 residue peptides which completely killed *E. coli* within 5 mins at a concentration of 5  $\mu$ M probably by membrane permeabilization [10]. The most important antimicrobial peptide (AMP) to be isolated from marine annelid is Hedistin. It is purified from the ragworm, *Nereis diversicolor*. Both native and synthetic hedistins are active against Gram-positive and Gram-negative bacteria [11]. Chain [12] isolated the potent bioactive compounds from marine polychaete *Glycera dibranchiate*. It revealed that coelomic fluid annelid exhibited Antifungal activity. Elayaraja [13] reported that the water, methanol and acetone extract from the whole body tissue of polychaete *Perinereis cultrifera* has potent Antifungal and antifungal activities. Among all the



## Single crystal growth and nonlinear optical analysis of L-glutamine doped ZTS crystal for photonic applications.

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### Abstract

The current manuscript is focused on the evaluation of the effect of L-glutamine (LG) on linear and nonlinear optical trait of Zinc (tris) Thiourea Sulphate (ZTS) crystal. Monocrystal of L-glutamine doped Zinc (tris) Thiourea Sulphate (ZTS) has been grown from aqueous solution by slow evaporation technique at room temperature. The UV-visible spectral evaluation has been carried out within 200 to 900 nm to determine the optical transparency. The measured optical transparency data has been used to determine the optical constants of grown crystals. The cutoff wavelength of the present crystal was found to be 268 nm with wide optical band gap of 4.35eV. The enhanced optical transparency and potent optical constants show material suitability for photonic applications. The influence of L-glutamine on SHG property was studied by classical Kurtz and Perry powder SHG test and it is found to be 1.05 times than that of pure ZTS crystal. The potential optical features and enhanced SHG efficiency of the grown crystal advocate its applicability for distinct photonic devices.

**Keywords:** Nonlinear optical crystal, Optical studies, SHG efficiency, kurtz-perry techniques

### Introduction

The progress in photonics industries has been expedited due the invention of excellent advanced non linear optical (NLO) materials. Moreover, the high-tech application in optoelectronic industries and optical data storage and transmission devices, optical modulators and demodulators has been based these outstanding optical nonlinear materials.[1] The pure organic or inorganic nonlinear optical materials are not suitable for designing of optical devices. However, the extensive studies of the semioragnic materials show their suitability in designing of high-tech devices due the outstanding physicochemical properties and optical nonlinearity. In last decade, the varieties of organometallic metal complexes with excellent nonlinear optical nature have been reported. [2-3] Recently, addition of amino acids gives substantial improvement in optical performance of various host NLO crystals due their Zwitter ionic nature. [4] The single crystal growth and various parameters of ZTS crystal have been extensively studied by doping various amino acids. [5-6] In the meticulous literature scan, the growth and investigation of linear and nonlinear optical properties of L-glutamine doped ZTS (LG-ZTS) crystal did not encounter in literature. Hence, in present work the LG-ZTS crystal has been grown and examined by linear and nonlinear optical characterization techniques.

### 1. Synthesis and growth

The enriched purity analytical reagent (AR) grade zinc sulphate (1mole) and thiourea (3mole) was dissolved in deionized water and the pure zinc (tris) thiourea sulphate salt is achieved. The purity of ZTS salt was improved by employing the successive recrystallization method. The ZTS salt was dissolved in deionized water and supersaturated ZTS solution was prepared. The doping of L-glutamine was achieved by adding 0.5, 1.0 and 1.5mole % to supersaturated ZTS solution in separate beakers. The solution allowed stirring well at constant speed for four hours to avoid co-precipitation and achieved the homogeneity throughout the aqueous solution. The Whatman filter paper was used to filter the homogeneous solution. The filtered solutions were kept for the evaporation in constant temperature bath of accuracy+0.01 at 36°C. The transparent, colorless and enrich quality pure ZTS and LG-ZTS crystal were grown within the period of 30 days which are shown in Figure 1.



# Growth, Structural and Thermal Properties of Thiourea Ammonium Acetate Doped KDP Crystal

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## Abstract

The single crystal of thiourea ammonium acetate doped potassium dihydrogen phosphate was grown by slow evaporation solution technique of size  $29 \times 13 \times 6 \text{ mm}^3$  at  $40^\circ\text{C}$ . The crystallographic unit cell parameters of grown crystal were determined by single crystal X-ray diffraction study. The incorporation of thiourea ammonium acetate in Potassium dihydrogen phosphate has been confirmed through the shifts in the vibrational frequencies of the grown crystals. The thermal properties of the grown crystal were carried out by thermogravimetric and differential thermal analysis.

**Keywords:** Crystal growth, FT-IR, Thermal studies.

## 1 Introduction

From last three decades non linear optics is playing important role in the advanced photonic and optoelectronic applications. Materials with excellent optical nonlinearities have been widely studied for their possible uses in different technologies [1- 2]. KDP has high efficiency for nonlinear conversion, wide optical transmission range with low cut off wavelength and high laser damage threshold. KDP is a transparent dielectric material best known for its nonlinear optical and electro optical properties. Because of its nonlinear optical properties, it has been incorporated into various materials for harmonic generation [3-4]. The thiourea molecule is an interesting inorganic matrix modifier due to its large dipole moment and ability to form extensive network hydrogen bonds. The centrosymmetric thiourea molecule, when combined with inorganic salt yield noncentro symmetric complexes, which has the nonlinear optical properties [5-7]. Recently different thiourea complexes like BTZC, BTZS, BTCF etc. were grown successfully by slow evaporation method [8-10].

The aim of the present investigation is to investigate the effect of Thiourea Ammonium Acetate (TAA) on structural and thermal properties of potassium dihydrogen phosphate (KDP) crystal.

## 2 Experimental procedures

The thiourea ammonium acetate was synthesized by dissolving AR grade thiourea and ammonium acetate in the molar ratio of 2:1 respectively in deionized water. The 0.1 and 0.3 mole % of thiourea grown in presence of ammonium acetate salt was doped into the supersaturated solution of KDP in two different beakers. After six hours, the homogeneous solution was filtered and kept undisturbed for slow evaporation. The purity of the thiourea ammonium acetate doped KDP crystal was achieved by the successive recrystallization. The good transparent seed crystals of doped KDP crystal were observed within 8-10 days. Then for bulk growth, the seed crystal of 0.1 mole % was suspended in a beaker consisting of 400 ml supersaturated solution of 0.1 TAA doped KDP crystal. It was kept in constant temperature bath at  $40^\circ\text{C}$  of accuracy  $\pm 0.01$ . The transparent and well-phased crystal of 0.1 mole % thiourea ammonium acetate doped KDP (TAA doped KDP) crystal was harvested within two week as shown in Fig.1 of size  $29 \times 13 \times 6 \text{ mm}^3$ .







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## स्थानिक स्वराज्य संस्थेत महिला नेतृत्वाच्या प्रगतीची वाटचाल

डा. तळेकर चंद्रशेखर काशिनाथ  
 गांधी महाविद्यालय, कडा, ता. आष्टी, जि. बीड.

(30)

प्रस्तावना :-

स्थानिक स्वराज्य संस्था हा भारतीय लोकशाहीचा पाया आहे. त्यांनी भारतीय ग्राम स्वराज्य बळकट केले आहे. नारायण अग्रवाल यांनी गांधीजींच्या कल्पनेतील भारतीय संविधान या ग्रंथात म्हटले आहे, "भारतामध्ये खेडी हा एक स्वयंपूर्ण घटक असल्यामुळे स्थानिक स्वराज्य संस्थांचे स्वतंत्र अस्तित्व टिकवणे आवश्यक आहे. पंडीत जवाहरलाल नेहरू यांनी स्थानिक स्वराज्य संस्था व त्यांची स्वायत्तता व स्वयंपूर्ण रूप कायम ठेवले व त्याचे फलित म्हणजे भारतीय संविधानातील पंचायत राज व्यवस्थेला देण्यात आलेले महत्व होय.

स्वातंत्र्यानंतर स्थानिक स्वराज्य संस्थांच्या विकासासाठी महत्वपूर्ण पावले टाकण्यात आली. स्वातंत्र्यानंतर पंचायत राज व्यवस्थेच्या विकासाला गती प्राप्त झाली. बळवंतराव मेहता समितीच्या शिफारशीनुसार पंचायत राज व्यवस्था त्रिस्तरीय पातळीवर म्हणजे ग्रामपंचायत, पंचायत समिती व जिल्हा परिषद या स्वरूपात संघटित करण्यात आली. महाराष्ट्रात यशवंतराव चव्हाण यांच्या काळात पंचायत राज व्यवस्था अधिक मजबुत करण्यात आली. त्यामुळे सहकारी चळवळीचा पाया घातला गेला व ग्रामीण नेतृत्वही उदयास आले. स्थानिक स्वराज्य संस्थेच्या संकल्पेनवर प्रकाश टाकताना प्रा. फाडीया म्हणतात, "पंचायत राज व्यवस्थेचा उगम व विकास हा चढ उतारांनी भरलेला आहे त्यामध्ये उतरती कळा, चढती कळा, शैथिल्य आणि पुनरुज्जीवन असे अनेक टप्पे मोडतात. पी.व्ही. नरसिंहराव यांच्या काळात 73 व्या घटना दुरुस्ती नंतर पंचायत राज व्यवस्थेला पुन्हा एक नवीन झळाळी प्राप्त झाली.

स्थानिक स्वराज्य संस्थेत महिला आरक्षण ही बाब सुध्दा सामाजिक न्याय मूल्यांशी निगडित आहे. महिला आरक्षणामुळे विकासाची फळे पोहचविण्यात. पंचायत राज्याला यश प्राप्त झाले आहे. संविधानाच्या 73 व्या घटना दुरुस्तीतील 248 डी (3) या कलमानुसार पंचायत राज व्यवस्थेला महत्व प्राप्त झाले आहे.

वर्तमान काळातील परिस्थितीनुसार असे लक्षात येते की, विविध राज्यामध्ये महिला नेतृत्व उदयास येत असून त्यांना दिलेल्या आरक्षणाचा लाभ महिला समर्थपणे घेत आहेत.

महिला आरक्षण महत्व :-

महिलांना स्थानिक स्वराज्य संस्थेत समांतर आरक्षणाची फलिते प्रत्यक्ष व्यवस्थेत दिसून येत असून त्यांचे प्रतिबिंब यथार्थपणे उमटत आहे. भारतीय समाजात स्त्रियांचे स्थान अद्यापही दुय्यम दर्जाचे आहे असे काही प्रमाणात दिसून येते. त्यामागचे खरे कारण म्हणजे भारतीय परंपरेने स्त्रियांना दिलेले अल्प महत्व होय. शिवाय कुटुंबापासून समाज जीवनातील अनेक महत्वाच्या स्थितीचा विचार करता महिलांना दुय्यम वागणूक आपल्या व्यवस्थेत दिली जात असे. या



6



Research Article

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# ASSESSMENT OF WATER QUALITY INDEX FOR PHYSICO CHEMICAL ANALYSIS OF DRINKING WATER IN AHMEDNAGAR CITY

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**ABSTRACT**  
The water bodies, lakes and estuaries are continuously subject to a dynamic state of change with respect to their geological age and geochemical characteristics. The physico-chemical characteristics of the aqueous phase have direct influence on the types and distribution of aquatic biota as well as on the health of the human being. With this pace the present study is carried out for determination of indicator parameters, in the ground water bodies of Ahmednagar city. To study extent of pollution in water and its quality; Water Quality Index (WQI) is calculated for its physico-chemical analysis. Water in Ahmednagar City is found to be safe as all samples have shown Water Quality Index less than 50.

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## INTRODUCTION

Water is the most precious and important natural resource is essential for survival of all living beings from plants, animals, herbs and microorganisms like bacteria, viruses upto human systems of human body (1-3). Physico- Chemical analysis is the first consideration of water quality for its best use i.e. for drinking, bathing, fishing, industrial processing etc. Ahmednagar City comes under draught prone area. The weather of the city is dry. It is found that because of the overuse & misuse of ground water resources as well as pollution, the water have become dangerously impure. The city is being used as dust-bin for the disposal of domestic refuse as well as industrial effluents. Drainage system in the city is open drainage system. The untreated domestic water from human settlement find their way into the river through drains, drains etc. This in turn results in organic, bacterial, chemical pollution of natural water resources and its aggravation day by day. Water which is to be utilized for human consumption should be free from pathogens as it may create epidemics also and should be free from hazardous chemicals as are risky to health. Demand analysis includes demand of oxygen to oxidize organic matter present in water bodies as pollutant. Thus the aim of present study is to estimate the extent of water pollution and thereby to assess the water quality status of Ahmednagar City by determining its Water Quality Index.

## Experimental

Survey of the city have been done and on the basis of topography. Samples from four sources i.e. stagnant water bodies, flowing water bodies, open dug well and tube well, have been collected. Study has been carried out in the month of August. The water samples have been analysed for study of water quality assessment and physico-chemical parameters. The analysed values have been then compared with permissible standard according to the Indian Standards IS 10500 & IS 2490. The analytical methods applied for determination of indicator parameters were also according to these standards. Six samples from different parts of central region of the city were collected. These were respectively from Tap water (Delhigate), Tube well (Kalyan Naka), Tube well (Swastik Chowk), Drainage (Chandani Chowk), Drainage (Zendigat), River (Sina River). Water Quality Index, indicating the water quality in terms of a index number, offers a useful representation

## METHOD AND REAGENTS

All Reagents used are of Anal R Grade, and Instruments like pH Meter, Spectrophotometer are Systronics Make Model. Methods used for analysis are according to IS:10500 and IS: 2490

**Method for Calculation of sub index or quality rating:** Let there be 'n', water quality parameters and quality rating or sub index (q<sub>n</sub>) corresponding to nth parameters is a number reflecting the relative value of this parameters in the polluted water with respective to its standard permissible value.

The q<sub>n</sub> is calculated using following expression.  $q_n = 100(V_n - V_{10}) / (S_n - V_{10})$

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