



## Studies on Dissolved Minerals in Municipal Tap Water of Some Selected Areas of Tiptur Town, Tumkur District

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### Abstract

Water is one of the most important of all natural resources known on the earth. The safety of drinking water is important for the health. The safety of drinking water is affected by various contaminants which included chemical and microbiological. The Physico-Chemical analysis of drinking water quality of Tiptur town were studied by taking parameter like Temperature, P<sup>H</sup>, Total dissolved solids, Salinity, Electrical Conductance, Total alkalinity, Total hardness, Calcium, Magnesium, Chloride, Dissolved Oxygen, Nitrate, Phosphate, Sulphate and Iron. The work was carried out during the period of one year from October 2014 to September 2015 in order to assess water quality. The results were compared with standards prescribed by BIS standard. The study revealed that parameters approach maximum limits of Standards.

**Keywords:** *Physico-Chemical parameters, Municipal tap water, Tiptur town, Drinking water quality.*

### Introduction

The quality of water is vital concern for mankind since it is directly linked with human welfare. The present investigations involve the analysis of Physico-Chemical parameters of drinking water supply to the residents of Tiptur town and evaluate its suitability for drinking with respect to BIS guide lines. Unsafe drinking water accounts for mortality and susceptibility to water borne microbial infectious diseases due to improper management and environmental degradation. Poor quality of water effects badly the plant growth and human health (SubbaRao, 2005, WHO 1992, Karanth 1997).

Water quality is a critical factor affecting human health and welfare. Water meant for drinking must therefore meet quality standards. Water quality is essentially described according to its Physical, Chemical and biological characteristics (Rafiullah Khan *et al.*, 2012). To assess that monitoring of these parameters is essential to identify magnitude and source of any pollution load.

The main aim of this study was to carryout different Physico-Chemical parameters of water samples collected from different locations of Tiptur town and to recommend whether it is suitable for drinking and domestic purpose.

### Study Area

Tiptur town is about 75km from Tumkur district. It covers an area of 785sq km having 13°16' north latitude 76°29' east longitude and an altitude of 850.30 meter above sea level. The average temperature ranges 11° in winter and 38° during summer. The average rain fall of Tiptur town is 503mm (Basavaraddi *et al.*, 2012).

### Material and Methods

Water samples from fifteen sampling locations in Tiptur town were collected in two liter cleaned and dried polythene bottles regularly for every month with necessary precautions. All the chemicals used were of AR grade. Double distilled water is used for the preparation of reagents and solutions. The water quality parameters like Temperature, P<sup>H</sup>, Total dissolved solids, Salinity, Electrical Conductance, Total alkalinity, Total hardness, Calcium, Magnesium, Chloride, Dissolved Oxygen, Nitrate, Phosphate, Sulphate and Iron were studied. Physical parameters were measured by using water analyzer kit at the spot. The water samples were immediately brought in to the laboratory. Chemical parameters were analyzed within 24 hrs in the laboratory by using standard methods as prescribed by APHA, AWWA, Trivedy and Goel (2006) and Kodarkar (1992). Some parameters like Phosphate, Sulphate, Nitrate and Iron were analyzed by using Spectrophotometer (Elmake). The present study was carried out during the period from October 2014 to September 2015 for seasonal studies Table-2.



# Applying Artificial Intelligence to Studies on Water Quality and Phytoplankton Diversity of Eachnur Tank, Tiptur, Tumkur-District, Karnataka, India

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**Abstract:** A possible reason for the slow progress in AI is that the computational complexity of general intelligence may be exponentially hard. The field itself, and the evolution of natural Water is basic pre-condition for life. Water of good drinking quality is of basic importance to human physiology and the existence of human being is very much depends on its availability. The assessment of Eachnur tank water quality for suitability for drinking and domestic purpose was carried out during November 2020 to August 2021 and evaluate the water quality status through its physicochemical parameters such as AT, WT, PH, TDS, EC, TA, TH Ca++Mg++ , Cl-, DOM , SALINITY, DO ,BOD, Na+, K+, PO4, SO4 and Fe. The results were compared with BIS Standard [1991] and WHO [1993] drinking water standards. The results revealed that most of the parameters were in normal range and indicated suitability for drinking purposes, and Artificial Intelligence applied for processing the samples with attributes and parameters with the test set. A total of 37 genera of phytoplankton were recorded, of which Chlorophyceae and diatoms were found to be dominant among four classes. Four protozoa were recorded.

**Key words:** Eachnur tank, water quality, Human physiology, physicochemical parameters, suitability, BIS and WHO, Phytoplankton oligotrophic, Artificial Intelligence.

## I. INTRODUCTION

Water is indispensable and one of the precious natural resources of our planet. Water is the precious gift graced by the nature to the human race. [ Water pollution, V K Berry ] Water is one of the major constituents of life supporting system. Water is essential for existence of life on earth. Water, indeed a wonderful medium, which has unique properties of dissolving and carrying in suspension of huge varieties of materials. It is strongly believed that first life originated in the ocean, Hence sea is called mother of life. 2/3 of the earth surface is covered by water but is not suitable for the sustenance and perpetuation of land plants and animals. Surface water is about 2% of the global water resources is most suitable for the very existence of all land plants and animals and out of this only 1% of freshwater is in river, streams, lakes, ponds tanks and reservoirs is available to all forms of living beings [P K Goel 2006] Quality and quantity of water at a place plays a vital role in health, wealth and prosperity of the region.

## PATHOS AND TOTAL PATHOS SEMIFULL BLOCK GRAPH

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### Abstract

In this paper, we introduce the concept of pathos semifull block graph and total pathos semifull block graph of a tree. We obtain some properties of these graphs. We study the characterization of graphs whose pathos and total pathos semifull block graph are planar, maximal outer planar, minimally nonouter planar, crossing number one.

### 1. Introduction

All graphs considered here are finite, undirected without loops or multiple edges. Any undefined term or notation in this paper may be found in Harary [2].

The concept of pathos of a graph  $G$  was introduced by [1] as a collection of minimum number of edge disjoint open paths whose union is  $G$ . The path number of a graph  $G$  is the number of path of pathos. Stanton [9] and Harary [2] have calculated the path number of certain classes of graphs like trees and complete graphs.

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Key Words : *Inner vertex number, Pathos graph, Semifull line and Semifull block graph.*

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## Pathos and Total Pathos Semifull Line Graph

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### Abstract

In this paper, we introduce the concept of pathos semifull line graph and total pathos semifull line graph of a tree. We obtain some properties of these graphs. We study the characterization of graphs whose pathos and total pathos semifull line graph are planar, maximal outer planar, minimally nonouter planar, crossing number one, noneulerian and Hamiltonian.

*Key words:* Inner vertex number, pathos graph, semifull line graph.

### Introduction

All graphs considered here are finite, undirected without loops or multiple edges. Any undefined term or notation in this paper may be found in Harary<sup>2</sup>.

The concept of pathos of a graph  $G$  was introduced by<sup>1</sup> as a collection of minimum number of edge disjoint open paths whose union is  $G$ . The path number of a graph  $G$  is the number of path of pathos. Stanton<sup>9</sup> and Harary<sup>2</sup> have calculated the path number of

certain classes of graphs like trees and complete graphs.

For a graph  $G(p, q)$  if  $B = \{u_1, u_2, u_3, \dots, u_r; r \geq 2\}$  is a block of  $G$ , then we say that point  $u_1$  and block  $B$  are incident with each other, as are  $u_2$  and  $B$  and so on. If two distinct blocks  $B_1$  and  $B_2$  are incident with a common cut vertex then they are called adjacent blocks.

The crossing number  $c(G)$  of  $G$  is the least number of intersection of pairs of edges in any embedding of  $G$  in the plane. Obviously



## Total Pathos Edge Semi Entire Block Graph

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### Abstract

In this paper, we introduce the concept of total pathos edge semi entire block graph of a tree. We obtain some properties of this graph. We study the characterization of graphs whose total pathos edge semi entire block graphs are always nonplanar, crossing number one, Eulerian and Hamiltonian.

**Keywords:** Block graph; Edge Semientire graph; Inner vertex number; Line graph

### Introduction

Let  $G(p, q)$  be a connected graph with vertex set  $V=p$  and the edge set  $E=q$ . If  $e=uv$  is in  $E(G)$ , then the vertices  $u$  and  $v$  are adjacent. For the graph theoretical notation, we follow in [1,2].

In [3] Venkanagouda et al. introduced the graph valued function, the pathos edge semi entire block graph of a tree  $T$ . The block graph  $B(G)$  of a graph  $G$  was introduced in [2]. Further the path graph  $P(T)$  of a tree was studied in [3].

The following theorems will be used in the sequel.

**Theorem 1** [6]. If  $G$  is a  $(p, q)$  graph whose vertices have degree  $d_i$  then  $L(G)$  has  $q$  vertices and  $q_L$  edges where

$$q_L = -q + \frac{1}{2} \sum_{i=1}^2 d_i$$

**Theorem 2** [6]. The line graph  $L(G)$  of a graph  $G$  has crossing number one if and only if  $G$  is planar and 1 or 2 holds:

1. The maximum degree  $d(G)$  is 4 and there is unique non-cut vertex of degree 4.
2. The maximum degree  $d(G)$  is 5, every vertex of degree 4 is a cut vertex and there is a unique vertex of degree 5 and has at most 3 edges in any block.

**Theorem 3** [2]. A connected graph  $G$  is isomorphic to its line graph if and only if it is a cycle [4].



# हिंदी रंगमंच की ऐतिहासिक यात्रा

—डॉ. के. एस. सुधा अनंत पद्मनाम

किसी भी देश का साहित्य उसके बाह्य जीवन, राजनीतिक तथा आर्थिक स्थितियों का विवरण मात्र होता है, परंतु राष्ट्र के साहित्य के इतिहास का अध्ययन उस देश के समाज के बौद्धिक, आत्मिक तथा मानसिक विकास का सिंहावलोकन समुपस्थित करता है। 'साहित्य' मनोवेगों की सृष्टि है, उसमें सहित तत्व (सहितस्य भावः साहित्यम्) की वाणी और अर्थ के वैभव का समावेश होता है। समाज का उत्थान-पतन, उसकी विचारधाराएँ तथा उसकी चेतन के विकास का स्रोत जानने के लिए साहित्य के इतिहास का अध्ययन आवश्यक है। हजार वर्षों की दबी भावनाएँ, अनुभूतियाँ तथा सुख-दुख से संबंध विचार शृंखलाएँ साहित्य के माध्यम से ही समझी जा सकती हैं।

हिंदी साहित्य का विकास विभिन्न उत्कर्षों से आन्दोलित परिवेश में क्रमबद्ध मंथरगति से होता आया है। यवनों के आक्रमण ने तो इसकी दिशा ही बदल दी थी, परंतु परिस्थितियों के दुर्गम शिखरों को भी सरलता से पार कर हिंदी-साहित्य जनसाधारण की भाषा में ढलकर लोकप्रिय बनता गया और अब तो इसे जनप्रियता की इतनी प्रभूत राशि उपलब्ध हो गई है कि हिंदी को राष्ट्रभाषा के पद पर सच्चे अर्थों में प्रतिष्ठा प्राप्त हो या न हो, हिंदी साहित्य का अध्यापन कश्मीर से कन्याकुमारी तक अविराम गति से प्रशस्त होता जा रहा है। हिंदी-साहित्य की मूलभूत विशेषता इसकी जनप्रियता है। हिंदी भाषा जन-जन की भाषा होकर संपूर्ण विश्व को एकता के सूत्र में बाँधने का कार्य अत्यंत सरलता से करती जा रही है।

आधुनिक काल के पूर्व हिंदी का समस्त प्राचीन साहित्य पद्य में लिखा गया, किंतु आधुनिक हिंदी साहित्य की रचना पद्य की अपेक्षा गद्य में ही अधिक हुई। हिंदी के आधुनिक साहित्य में गद्य का आविर्भाव नवयुग की चेतना का प्रतीक है।

जिस तरह प्राचीन काल में मनुष्य मूर्ति-रचना, चित्रांकन, संगीत तथा कविता की भिन्न-भिन्न प्रगतियों से अपनी भावनाएँ व्यक्त करता था, उसी प्रकार वह आज भी कर रहा है। साहित्य के मूल में भी वे ही मनोभाव हैं, जो सब कलाओं के मूल में हैं। साहित्य की उत्पत्ति और विकास प्रकार भी उसी तरह हुई है, जिस तरह से अन्य कलाओं का

जन्म: 18.07.1976

शिक्षा:

- ❖ पी.एच.डी.
- ❖ एम. फिल.
- ❖ बी. एड.
- ❖ एम.ए.

व्यवसाय: व्याख्याता, हिंदी विभाग

प्रकाशन:

- ❖ 'वागप्रवाह' पत्रिका में 'मुद्राराक्षस का साहित्यिक अवधान' नामक लेख प्रकाशित, 2014
- ❖ 'भारत का साहित्य और विश्वशांति' पुस्तक में 'साहित्य और विश्वशांति' नामक लेख प्रकाशित, 2013
- ❖ 'समकालीन साहित्य की चुनौतियाँ' पुस्तक में 'हिंदी की प्रमुख दलित कहानियाँ' नामक लेख प्रकाशित
- ❖ 'हिंदी साहित्य में परिलक्षित संवेदना और सरोकार' पुस्तक में 'हिंदी साहित्य में भक्ति आन्दोलन' नामक लेख प्रकाशित

पुरस्कार: गोवा की राज्यपाल, श्रीमति मुदुला सिन्हा द्वारा पी.एच.डी. अवार्ड, 2015



हुआ है। अन्य ललित कलाओं की ही भाँति साहित्य-स्रष्टा का चौतन्त्र भी मनुष्य है। यह संसार असंख्य जीवधारियों की निवास-भूमि है।

वर्तमान काल के भारतीय नाटक अधिकांश में पश्चिमी शैली का अनुकरण करके सफलता प्राप्त करना चाहते हैं, परंतु इस देश में रूपक-रचना का मार्ग प्रशस्त किया जा चुका है और हम निस्संकोच रूप से कह सकते हैं कि यहाँ का रचना-क्रम पाश्चात्य प्रणाली से किसी अंश में कम उत्कृष्ट नहीं है। जब हम इस बात पर ध्यान देते हैं कि ईसा के कई शताब्दी पूर्व यहाँ 'नाट्य-शास्त्र' जैसे चमत्कारी ग्रंथ प्रसिद्ध हो चुके थे और भास तथा कालिदास जैसे श्रेष्ठ नाटककार अपनी नाट्य-सृष्टियाँ प्रस्तुत कर चुके थे, तब हमारे मन में आनंद और उत्साह की धारा प्रवाहित हो चलती है।

## हिंदी रंगमंच का इतिहास

भारतीय रंगमंच की परंपरा अति प्राचीन है। भारतीय पुराण कथा के अनुसार





## REVIEW OF RESEARCH

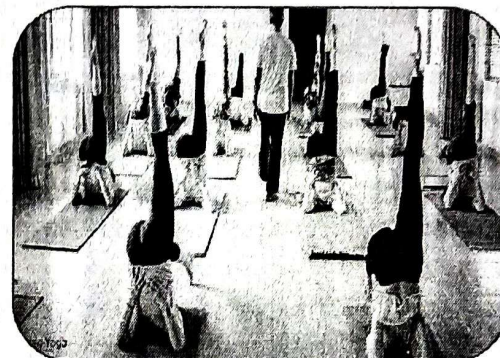
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### ASSESSMENT OF CAST AND FAMILY INCOME OF PHYSICAL EDUCATION TRAINEES IN KARNATAKA STATE

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#### ABSTRACT

*The purpose of the study was to analyse the socio-economic diversity of future physical education teachers in the state of Karnataka. For the purpose of the study 553 physical education trainees studying in various universities of Karnataka during the academic year 2008-09 served as subjects. Equal representation was given to students studying in the department of physical education at university level i.e. university college of physical education (U.C.P.E.) and private physical education training colleges in Karnataka. In order to systematically depict the results, tabular analysis was made and quantitative percent analysis was done to assess percentage wise belongingness to various categories of personal effectiveness. The researcher constructed and standardized the questionnaire considering the social, economic related variables with due care. **Results:** It was found that about eight six percent of trainees have a family income of fifty thousand and below. Majority of trainees (i.e about fifty six percent) belong to other backward community.*

**KEYWORDS:** Socio-Economic Status, Cast, Income.

#### 1. INTRODUCTION

Instruction is considered as an amazing office, which is instrumental in realizing the ideal changes in the social and social existence of a country. The entire procedure of instruction is formed and shaped by the human identity called the educator, who assumes a crucial job in any arrangement of training. The readiness of such a vital functionary should possibly get the most astounding need. His is a testing calling and just those educators can bear the substantial obligations of country building, which are satisfactorily arranged and have sound proficient demeanor. This sufficiency of readiness, obviously, connotes improvement of satisfactory aptitudes, devotion to educating and an assurance for consistent development and learning.

An individual's or group's position within a hierarchical social structure. Socioeconomic status depends on a combination of variables, including occupation, education, income, wealth, and place of residence. Sociologists often use socioeconomic status as a means of predicting behavior. Financial status is a monetary and sociological consolidated all out proportion of an individual's work involvement and of a person's or family's financial and social position in connection to other people, in light of salary, training, and occupation. While breaking down a family's SES, the family pay, workers' training, and occupation are analyzed, just as consolidated salary, versus with a person, when their own traits are evaluated. Financial status is regularly broken into three classes, high financial status, center financial status, and low financial





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## AN ASSESSMENT OF EDUCATION AND RESIDENTIAL STATUS OF PHYSICAL EDUCATION TRAINEES IN KARNATAKA STATE

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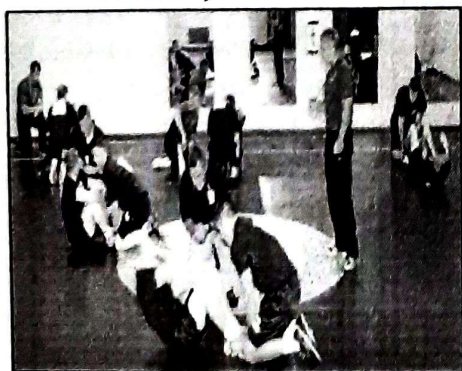
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**KEYWORDS :** Socio-Economic Status, Education, Residential Status.

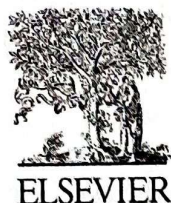
### 1. INTRODUCTION

Instructors are relied upon to utilize the prescribed procedures and systems to satisfy test needs of their vocation. In the event that the instructors are all around prepared and profoundly energetic, learning will be upgraded. The encouraging calling requests clear define objectives, love for calling and clearly the more good mentality towards the calling. Financial status is generally conceptualized as the social standing or class of an individual or gathering. Usually estimated as a mix of training, salary and occupation. Examinations of socioeconomic status often reveal inequities in access to resources, plus issues related to privilege, power and control ([www.apa.org](http://www.apa.org)).



A family's financial status depends on family pay, parental training level, parental occupation, and societal position in the network, (for example, contacts inside the network, bunch affiliations, and the network's impression of the family), note Demarest, et.al (1993). Families with high financial status frequently have more achievement in setting up their young youngsters for school since they regularly approach a wide scope of assets to advance and bolster youthful kids' improvement. They can give their young kids astounding kid care, books, and toys to empower youngsters in different learning exercises at home. Likewise, they have simple





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# Synthesis of BiOCl: Eu<sup>3+</sup> Microarchitectures and Their WLED's, Fingerprint Detection and Anticounterfeiting Applications

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## Abstract

BiOCl: Eu<sup>3+</sup> (1-9mol %) microarchitectures were synthesized by the solution combustion method by employing Barbituric acid as fuel. The crystal structure, morphologies and luminescence properties of Eu<sup>3+</sup> doped BiOCl have been systematically investigated by powder X-ray diffraction (PXRD) and scanning electron microscopy (SEM) and spectroscopy respectively. The prime objective of the current effort was first to fabricate highly luminescent nanophosphor for revelation of latent fingerprints, lips prints including infiltrating and non-filtrating surfaces and also to develop luminescent ink for anticounterfeiting applications. Presently the fingerprints developed by using conventional powders have several disadvantages including low sensitivity, high background hindrance, complicated procedure and high toxicity. To encounter this challenge, we explored the optimized BiOCl:Eu<sup>3+</sup> (3mol %) nanophosphor for detection of latent fingerprints and luminescent anti-counterfeiting ink. The morphology of the phosphor was tuned by adjusting the concentration of fuel. Photoluminescence studies of BiOCl:Eu<sup>3+</sup> (1-9mol %) exhibited the peaks <sup>5</sup>D<sub>0</sub> → <sup>7</sup>F<sub>J</sub> (J = 0, 1, 2, 3, 4) transitions. The CIE and CCT characteristics specify that the synthesized nanophosphor might be immensely show potential red factor for promising applications in WLED's. The BiOCl: Eu<sup>3+</sup> (1-9 mol %) nanopowder also showed clear ridge patterns of level I and level II and further showed sharp image of label when observed in the UV light. The results indicated that the present phosphor could be used in both forensic as well as in anti counterfeiting applications.

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**Keywords:** BiOCl, Barbituric acid, morphology, luminescence, Eu<sup>3+</sup>, nanophosphor, photoluminescence

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# Using Machine Learning Techniques Studies on Water Quality Index and Phytoplankton Diversity of Tiptur Lake, Tiptur, Tumkur-District, Karnataka, India

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**Abstract:** Artificial Intelligence is that the computational complexity of general intelligence may be exponentially hard which happens with Machine Learning. The field itself, and the evolution of natural Water is basic pre-condition for life. Water of good drinking quality is of basic importance to human physiology and the existence of human being is very much depends on its availability. The assessment of Tiptur lake water quality for suitability for drinking and domestic purpose was carried out during November 2020 to August 2021 and evaluate the water quality status through its physicochemical parameters such as AT, WT, P<sup>H</sup>, TDS, EC, TA, TH Ca<sup>++</sup>, Mg<sup>++</sup>, Cl<sup>-</sup>, DOM, SALINITY, DO, BOD, Na<sup>+</sup>, K<sup>+</sup>, PO<sub>4</sub>, SO<sub>4</sub> and Fe. The results were compared with BIS Standard [1991] and WHO [1993] drinking water standards. The results revealed that most of the parameters were in normal range and indicated suitability for drinking purposes, and Artificial Intelligence applied for processing the samples with attributes and parameters with the test set. A total of 37 genera of phytoplankton were recorded, of which chlorophycean and diatoms were found to be dominant among four classes. Four protozoa were recorded.

**Key words:** Tiptur-Lake, water quality, Human physiology, physicochemical parameters, suitability, BIS and WHO, Phytoplankton oligotrophic, Artificial Intelligence.

## INTRODUCTION:

Water is indispensable and one of the precious natural resources of our planet. Water is the precious gift graced by the nature to the human race. [Water pollution, V K Berry] Water is one of the major constituents of life supporting system. Water is essential for existence of life on earth. Water, indeed a wonderful medium, which has unique properties of dissolving and carrying in suspension of huge varieties of materials. It is strongly believed that first life originated in the ocean, Hence sea is called mother of life. 2/3 of the earth surface is covered by water but is not suitable for the sustenance and perpetuation of land plants and animals. Surface water is about 2% of the global water resources is most suitable for the very existence of all land plants and animals and out of this only 1% of freshwater is in river, streams, lakes, ponds



## **Biodiversity conservation of Medicinal plants through Ex situ method for sustainable environment**

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### **Introduction:**

There is growing concern for the medicinal plants and their conservation since last few decades. There is an urgent need to protect environment which is affected adversely by various factors.

Biodiversity is the very basis of Human survival and economic well being and constitutes the resources upon which families, communities, nations and future generations depend (Singh et al. 1994). The status and characteristics of biodiversity prevalent in a country/state/region is dependent on the land (Soil, topography),climate and people( their habitats and population density) inhabiting the region ( Nayar 2011). India is one of the 33 hotspots of the world( conservation International 2007) and over 17,000 species of higher plants are reported to occur, of which 7500 are used for healthcare by various ethnic communities ( Shiva 1996). About 600-700 species are in much use mostly by the tribal and the rural population. About 60% of the population of the world and 80% of the population in developing countries rely on traditional medicines, mostly plant drugs for their primary healthcare needs. In India, 70% of the population dependent on traditional plant based medicines as primary healthcare sources (Anonymous 2003] a.

Biological diversity is being viewed as the potential resource capital of a state, region or country that posses it.It is sad to see people destroying valuable flora in their immediate surrounding either satisfying sedative or individual gain .so some plants have already been extinct and there are many facing danger of extinction.The objective of the present study was conservation of some medicinal plant species by exsitu method in botanical garden of KFGS college, Tiptur.





## Assessment of Water Quality of Eachnur Tank, Karnataka, India By Water Quality Index Method (WQI)

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### ABSTRACT

*The present work aimed assessing the water quality index [WQI] of the Eachnur tank water. This paper deals with the study on the influence of environmental factors on water body. Water quality index, is number indicating the overall water quality in number, offers a useful meaning for its purity water for public or for any intended use. This information can be used reduce the pollution load and in the water quality management. In the present study water quality index was determined on the basis of various physico- chemical parameters like pH, Electrical conductivity, Total dissolved solids, Total alkalinity, Total hardness, Calcium, Magnesium, Chlorides and Dissolved oxygen. It is computed that the water quality index varies between 74.14 and 93.3. It reveals that the water was good in quality for domestic use and drinking only after treatment.*

**Key words:** Eachnur tank, Pollution control, Physico chemical parameters, Quality of water for public, Water quality index.

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### INTRODUCTION

Water is one of the abundantly available substances in nature. Water is the precious gift graced by the nature to the human race. It is an essential constituent of all animals and plants. [1]. Among the planets, the unique one is Earth as it is being covered by water. The water available on the earth cannot be used for all the human activities, but only a small amount of water is useful for human and other living beings. The fresh water resource is very much limited, restricted to springs, streams, rivers, lakes, tanks and ponds. Though the source of freshwater is very limited, it is being polluted indiscriminately by human beings; as a result of this freshwater is going to become a key limiting factor. As a result the condition of the water bodies is pathetic. It is with this background, the present work was undertaken during the winter and summer season.

Water Quality Index [WQI] provides a single number that expresses overall quality at certain location and time based on several water quality parameters. The objective of the water quality index is to turn complex water quality data into information that is understandable and usable by the public. Water quality index based on some very important parameters can provide simple indicators of water quality. WQI is one of the most effective tools to communicate information on the quality of water to the concerned citizens and policy makers. It is, thus becomes important parameter for the assessment and management of surface water.

### STUDY AREA

Tiptur taluk is about 75 km from Tumkur, Karnataka. It is a southern peninsular India having East latitude 13°23' degree and North longitude 76° 29' degree at an altitude of 850.3 M above sea level. It covers an area of 758.5 sqkm. The Eachnur tank is located 7 km from Tiptur, spread over 250 acres. The tank holds 450 million gallons of water, not only the prime source of drinking water for Tipturians but to replenish the dreaded ground water in and around the feeding area. Eachnur tank is one of the important major water supply resources to Tiptur and Arasikere towns for the human domestic and even for





## Evaluation of water quality of Tiptur Lake, Tumkur District, Karnataka by Water Quality Index Method

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### ABSTRACT

Water is a "cradle of life" on which all organisms play. Lentic water system is more accessible to pollution than ground water because of increased industrialization, anthropogenic activities and disposal of septic effluents, domestic and municipal sewage. The present investigation is an attempt to provide information on certain physico-chemical parameters like  $P^H$ , EC, Turbidity, Total hardness, Total alkalinity, DO, Chloride, Calcium and Magnesium of Tiptur lake in order to know suitability for domestic and human consumption based on computed water quality index values.

**KEY WORDS:** Lentic water, Water Quality Index, Tiptur Lake, Anthropogenic activities.

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### INTRODUCTION

Water is essential for survival of any form of life. Water is aptly being described as the mother of life, a precious gift of nature to humankind and millions of other living species. It also performs unique and indispensable activities of ecosystem, biosphere and biogeochemical cycle.

The lentic water systems are the most important sources of water for human activities which are under severe environmental stress as a consequence of developmental activities. Freshwater resource is at a faster rate of deterioration day by day is now a global problem, [1].

Water quality is a measure of its suitability for human consumption, irrigation, recreation, pisciculture and other purposes. Water quality of lentic and ground water is affected directly or indirectly by the leachates from farm fields, discharge of domestic waste, washing of animals, cloths and decaying of flora in the water body [2].

World health organization survey has revealed that 1.2 billion people all over the world do not have access to pure and safe drinking water. Unsafe drinking water accounts for mortality and susceptibility to water borne microbial infectious diseases due to improper management and environmental degradation. Inadequate management of water resources directly or indirectly resulted in the degradation of hydrological environment [7]. Any change in hydrological characteristics of water not only alters its quality, but also disturbs aquatic environment and ecological balance. Therefore a periodical monitoring of water quality is necessary to take appropriate steps for water resource management practices.

Water quality index is one of the most effective tools to communicate information on the quality of water to the concerned citizens and policy makers and environmental planners. The water quality index was first developed by Horton in early 1970, [3]. Water quality index provides a single number that expresses the overall water quality at a certain locations and time, based on several water quality parameters. The objective of water quality index is to turn complex water quality data into information that is understandable and useable by public and environmental planners.