

ADVANCED PEDAGOGY AND TEACHING IN SURYA NAMASKAR

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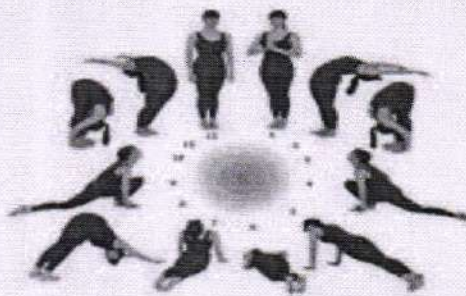
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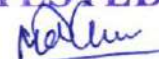
Introduction:

Education or learning is the basic need of man. Education is the process of progress and development. Education promotes growth development experiences and working capacity. It is necessary to make use of education for financial and social growth. Education comprises of two process, namely teaching and learning. Accordingly there has to be a 1) Teacher 2) One or more students. The teacher provides information and students absorb the same. The result of their interaction is the process of education.

Surya Namaskar is a sequential combination of yogic postures performed dynamically in synchrony with the breath. The Surya Namaskar is one of the best exercises that people can perform. The benefits accruing form these exercises are unique and excellent. Surya Namaskar is a sequence of yogic postures along with chants that together comprise a complete yoga. This series of exercise activates the endocrine glands and the chakras. It accords overall strength and flexibility to the body. Documented to have beneficial effects on chronic skin problems it relieves stress and tension. Surya Namaskar is a worship Surya as sun is the prime source of light and energy. Practicing Surya Namaskar is a kind of giving gratitude to the sun. It has been practiced in India for thousands of years form Vedic era by Rishimunis. It has been transferred through generation after generations. It is combination of asanas as well as pranayames. Energy is circulated throughout the body by Surya Namaskar through suryanadi due to which psychological balance is achieved and development pranshakti can be achieved.



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EFFECTS OF SURYA NAMASKAR AND YOGA NIDRA ON PHYSICAL PROBLEMS OF ADOLESCENT GIRLS DURING THEIR MENSTRUATION

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Abstract

Adolescence is a developmental transition between childhood and adulthood. In this phase of there are several physical and physiological changes taken place in the body. Menstrual cycle is the one of the major change occurred in the female's body. Though it is a normal physiological process, many a times associated with physical discomforts before and during menstruation. Surya Namaskar and Yoga Nidra offer great help at puberty. The purpose of the present study is to find out the effects of Surya Namaskar and Yoga Nidra on physical problems of adolescent girls during their menstruation. To achieve this purpose researcher selected 180 adolescent girl (mean age=13.23 ± 0.756) who have started their menses students. They were assigned into three equal groups (n=60 in each group) viz., SNG, YNG and CG and 24 weeks well designed Surya Namaskar and Yoga Nidra programme is implemented on the respective group. A 9 item questionnaire for measuring physical problems constructed by researcher is used for the data collection. It is concluded that, both Surya Namaskar and Yoga Nidra help to reduce physical problems ($p < 0.01$) of adolescent girls during menstruation in 24 weeks.

Key words: Surya Namaskar, Yoga Nidra, Menstrual problems, Adolescent girls.

Introduction:

Adolescence is a period of transition, stress and storm. The term adolescence has been defined by World Health Organization as 'a period of life where a series of varied, rapid and extensive change occurs'. After infancy period, it is a crucial phase to catch-up growth in the life cycle of girls. At this stage many physical & physiological changes take place.

Menstruation is purely a physiological process preparing the female body for reproduction (Iyengar, G. S., 2008). It is a natural monthly cycle in women. Menstruation is a periodic change occurring in a female in which discharge of blood and cells which sheds from the lining of the uterus

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2015-16 ✓

The Growth and Impacts of Service Sector

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In most of the low income economics Agri – is the predominant sector. As these economics progress, the share of Industrial Sector in economic activities increases. The development of industries, in turn, promotes a wide range of activities in the service sector life banking, insurance, transportation, trade communication etc.

On the basis of this observed development pattern of countries some economists like fisher, clark, Rostow, Kuznets, have suggested that development is a three stage process.

The dominance of the services sector in the growth process is associated with the third stage of development.

In India, the acceleration in growth in recent years has been due to the dynamism of the services sector while the contribution of industry has tended to stagnate over the last three decades.

Services now contribute 59% to India's GDP and have contributed to more than 60% of India's Growth during the period of the last decade and a half. This has led to speculation whether India would chart out a unique growth path in which the country would leapfrog from a predominantly agricultural to a directly service dominated economy by skipping the intermediate stage of rising share of Industrial sector that was experienced by all the existing industrialized countries.

In the present paper we discuss the following issues realiting growth of service sector in India.

Growth and contribution of service sector :**a) Sectoral Growth Rates :**

The Indian economy has grown at a robust during the last few years and a striking feature of this growth performance has been the strength of the service sector.

Sectoral Growth Rates during the planning period.

(Percent per annum)

Sector	1951-80	1981-90	1991-2000	1992-97	1997-2002	2002-07	2007-12	2011-12 2 nd RE	2012-13 1 st RE	2013-14 AE
Agri.	2.1	4.4	3.1	4.8	2.5	2.4	4.1	5.0	1.4	4.6
Industry	5.3	6.8	5.8	7.3	4.3	9.2	7.7	7.8	1.0	0.7
Services	4.5	6.6	7.5	7.3	7.9	8.8	9.4	6.6	7.0	6.9
GDP at factor cost	3.5	5.8	5.8	6.6	5.5	7.6	8.0	6.7	4.5	4.9

1st RE – First Revised estimate, 2nd SE R.est., At Advanced estimate

As per above table data shows that :

- On average services grow slower than Industry between 1950 and 1990.

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Scientific paper

First Direct Isolation of Stable α -Form Crystals of Mirabegron, a Selective β_3 -Adrenoceptor Agonist

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Abstract

An efficient and scalable method for the direct isolation of stable α -form crystals of Mirabegron (**1**) is developed. The developed method negates transformation of metastable β -form crystals into α -form crystals thereby overcoming the limitations of reported methods and avoids additional processing steps during its manufacture. The developed method directly provides stable α -form crystals of Mirabegron (**1**) with yield of around 84% and purity of >99.77% by HPLC in a single step.

Keywords: β_3 -adrenoceptor agonist, Mirabegron, polymorphism, polymorphic transformation.

1. Introduction

Crystallization operation is often critical in pharmaceutical industries as it solely determines product properties such as the polymorphism, crystal size distribution, and crystal habit.¹ Change in polymorphic form may alter product characteristics such as dissolution, hardness, color, optical properties, melting point or chemical reactivity. As regulatory perspective, developing the process which provides exclusively pure polymorph of a drug substance that should be stable enough to maintain the polymorph integrity during formulation of the drug product and storage throughout its life cycle is very necessary. The driving force in crystal formation is super saturation and when a super saturation of crystallizing compound is created by chemical reaction, the operation is known as reactive crystallization. In reactive crystallization, reactions can be very fast compared to the mass transfer rates and growth rates to the crystals thus reactive crystallizations can lead to the exclusive formation of the metastable polymorph of a system.² This article is aimed to provide a case study wherein systematic crystallization of stable α -form

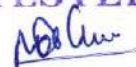
crystals of Mirabegron (**1**) is achieved by circumventing the following limitations of the known processes; (a) reactive crystallization of metastable β -form crystals of **1** and (b) transformation of metastable β -form crystals into α -form crystals using a seed.

2. Background

Mirabegron (**1**), chemically known as 2-(2-amino-1,3-thiazol-4-yl)-N-[4-(2-[[[(2*R*)-2-hydroxy-2-phenylethyl]amino]ethyl]phenyl]acetamide is a selective agonist for the human beta 3-adrenoceptor³ (β_3 -AR) approved for the symptomatic treatment of urinary urgency, increased micturition frequency and/or urgency incontinence in patients with overactive bladder (OAB) syndrome.^{4,5} Mirabegron has distinct and novel mechanism of action compared to antimuscarinics⁶ as it improves the storage capacity of the bladder without inhibiting bladder voiding thereby prolonging the time between trips to the toilet for the patient.⁵ Mirabegron (**1**), developed by Astellas Pharma was approved by the USFDA in 2012 and EMA in 2013

Deshmukh et al.: First Direct Isolation of Stable α -Form Crystals ...

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Research Article

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Synthesis and Antimicrobial Study of Triazolo[3,4-*b*][1,3,4]Thiadiazole and Triazolo-[3,4-*b*][1,3,4]Thiadiazine derivatives of Chromeno [4,3-*b*]pyridin-5-one moiety

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Dattatray G. Deshmukh¹, Sharad S. Gaikwad¹ and Avinash D. Bholay²**

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ABSTRACT

The series of new Triazolo[3,4-*b*][1,3,4]thiadiazole (7a-e) and Triazolo[3,4-*b*][1,3,4]thiadiazine (8a-e) derivatives of chromeno[4,3-*b*]pyridin-5-one were successfully synthesized by multistep synthesis of 4-amino-3-formyl-2-oxo-2H-chromene. The newly synthesized compounds were well characterized by IR, ¹HNMR, ¹³CNMR, Mass and Elemental analysis. The compounds were evaluated for their antimicrobial activity against three antibacterial species namely *Staphylococcus aureus*, *Escherichia coli* and *Bacillus cereus* and two fungal species namely *Candida albicans* and *Aspergillus clavatus*. Most of the compounds show very good antimicrobial inhibition while compared with the standard drug such as Ciprofloxacin and Ketoconazole.

Keywords: Coumarin, Triazolothiadiazole, Triazolothiadiazine, Antimicrobial activity.

INTRODUCTION

Heterocyclic system containing Coumarin nuclei are the most versatile bioactive compounds. Presence of lactone framework in the coumarin makes it hydrophobic which is responsible to exhibit the biological potency. The incorporation of other groups alters the Pharmacological property of parent Coumarin and converts it into more useful products [1]. Natural Coumarins are well known to have antidiabetic activity [2]. The Natural product Lamellarins belongs to the coumarin nucleus [3]. The potent antibiotic like Novobiocin, Coumaromycin and Chartesium containing coumarin nucleus. Many Coumarin derivatives are applied as anticoagulant [4], anti-HIV [5], Antifungal [6], antiviral [7], antitumor [8], Cytotoxic [9] and antioxidant activity [10]. Triazole and Thiadiazole derivatives are well known for their antimicrobial [11-15], anti-inflammatory [16], anti-leishmanial [17] and anticancer activity [18].

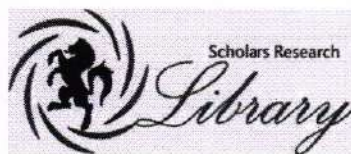
In the present communication we have reported the synthesis and antimicrobial evaluation of Triazolothiadiazole and Triazolothiadiazine encouraged from our ongoing project [19]. We have to know the effect of incorporation of various biologically active heterocyclic entities such as sulfur in the form of pentacyclic heterocycles such as thiadiazole and six membered heterocycles such as thiadiazine and secondary amine such as morpholine in the target molecule. The reported compounds are synthesized for first time obtained in good yield by using readily available materials.

EXPERIMENTAL SECTION

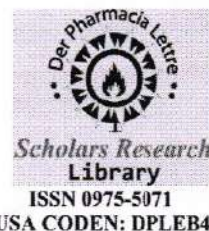
Unless otherwise stated, all materials were obtained from commercial suppliers and were used without further purification. All reactions were monitored by thin layer chromatography (TLC) on 25mm silica gel 60 F254 plates (Merck, Darmstadt, Germany) using UV light (254 & 366 nm) for detection. Compounds were purified by column

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Synthesis, Characterization of β - amino ketone Complexes and Study of their Antibacterial Activity

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ABSTRACT

One pot mannich reaction of aromatic amine, aromatic aldehyde and aromatic ketone, in preference of catalytic amount of sulphamic acid furnish β - amino carbonyl compounds in good yields. These β - amino ketone was reacted with metal acetate of Co (II), Ni(II) and Mn (II), form square planer complexes in good yields. All the ligand and metal complexes obtained were well characterized by spectroscopic and analytical methods. The new metal complexes were tested for antibacterial activity against three pathogenic bacteria. *B.subtilis*, *E.coli* and *B.cereus* show good activity.

Keywords: Mannich reaction, β -amino carbonyl compounds, antibacterial activity, Transition Metal Complexes of β - amino ketone.

INTRODUCTION

Catalytic three component Mannich reaction is important reaction in organic synthesis for carbon-carbon bond formation [1-3]. The β - amino carbonyl compounds are useful building blocks for the synthesis of drug intermediates [4-5].

The β - amino carbonyl derivatives are the best ligands for formation of metal complexes due to present active functional group of 1, 4 position, carbonyl and NH groups gives facile hexagonal coordination compounds with transition metal salts. The asymmetric metal complexes are important, can be used in organic synthesis as catalyst.

The properties of coordination compounds depends upon the nature of donor ligands. The precursor of polar atoms such as O, N and the group OAc can increase the water solubility of these complexes. While the presence of aromatic group enhance lipid solubility. Hence these complexes can be easily penetrate in the bacteria cells and inhibit the cells division to prohibit their growth.

MATERIALS AND METHODS

NMR spectra were recorded on a Bruker (300 MHz) spectrometer. Melting points were determined on a Gallenkamp melting point apparatus. The ^1H Chemical shifts were reported in ppm relative to tetramethylsilane



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SCREENING AND EVALUATION OF PGPR FOR PLANT HORMONE INDOLE -3-ACETIC ACID (IAA) PRODUCTION FROM SOYBEAN (GLYCINE MAX.L.).Avinash S.Kale^{1*}, Abhay B. Solunke², Jayashree N. Bandal³

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*Email- avinashkale25@rediffmail.com**Abstract**

Thirty one rhizobacteria were isolated from rhizospheric soils of Nasik District region. The isolated soil bacteria were screened for the production of indole acetic acid, phosphate solubilisation and 3-acetic acid (IAA) production that are Gram negative, catalase positive and starch hydrolysis positive. Isolate PR20 was the best IAA producer strain (45.25µg/ml) while isolate PR10 was lowest IAA producer (15.25µg/ml) comparatively. All three isolates showed siderophore production, while phosphate solubilisation was shown by only P20 isolate. All the three isolate showed nitrogen fixing activity in Ashby's Nitrogen free Manitol Broth media.

Effect of IAA producing PGPR alone and in different combinations was studied on seed germination of soybean plant. Treatment with PGPR isolates in combination of PR4, PR10, and PR20 on soybean seedling showed maximum shoot length (7.6cm), root length (4.0cm), shoot fresh weight (0.104g), root fresh weight (0.005g), fresh plant weight (0.109g) and dry plant weight (0.018g) as compared to control and other PGPR combinations. The consortia of three isolated bacterial strains showed significant effects on rate of seed germination. Thus, the use of combination of PGPR isolates is encouraged for excellent growth performance of plants.

Keywords: Plant hormone, Siderophore, Phosphate solubilisation, Indole acetic acid, PGPR, Soybean.

Introduction: Globally legumes play vital role in human nutrition since they are rich source of protein, calories, certain minerals and vitamins. Among which soybean is probably the largest source of vegetable seed oil (20%) and protein (40%)⁽¹⁵⁾. Owing the nutritional and health benefits of soybean, it excited the growers in recent years. US, Argentina, Brazil and China claims as the biggest producers of this super crop, the modern technologies and changes in their agronomic practices is worth to discuss on its possibility in Indian scenario. Production of soybean in India (4% of global) at the present time is restricted mainly to Madhya Pradesh, Uttar Pradesh Maharashtra and Gujarat. It is also grown on a small acreage in Himachal Pradesh, Punjab and Delhi. Soybean cultivation in India was negligible until 1970, but it grew rapidly thereafter, crossing over 6 million tons in 2003. This has made India the 5th largest producer of soybean in the world today⁽³⁸⁾. In the last two years, soybean was grown in Maharashtra of about 2.4 million hectares producing from 1.9 to 2.4 million tonnes, with an average productivity of 822 to 1, 040 kg/ha. The area is increasing rapidly over the years. In Maharashtra the area under soybean cultivation during Kharip 2013 is 38.704 lac Hectares as compared to 32.130 lac Hectares during Kharip 2012. The yield 1255 Kg/ha., and production of 48.565 lac tons were estimated during Kharif 2013⁽¹⁸⁾.

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SYNTHESIS AND ANTIMICROBIAL EVALUATION OF PYRAZOLO [3,4-b] PYRIDINONE DERIVATIVESKailas R. Labhade^{1*}, Madhukar N. Jachak¹, Avinash S. Kale² and Vishwas B. Gaikwad¹¹Dept of Chemistry, K.T.H.M. College, Gangapur Road, Nashik, (MS), India²Dept of Microbiology, S.V.K.T. Arts, Science and Commerce College, Deolali Camp, Nashik, (MS), India**Abstract**

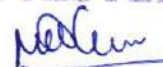
A series of 1-phenyl-3-aryl-4-methyl-1,7-dihydropyrazolo[3,4-b]pyridine-6-one was synthesized by using simple and efficient method. These intermediates are effectively used for the synthesis of their oxygen substituted derivatives. All synthesized compounds were screened for their antimicrobial activity towards various bacterial and fungal strains at different concentrations. Results showed that majority of compounds have significant antibacterial and negligible antifungal activity.

Keywords: 5-Amino Pyrazole, Pyrazolo[3,4-b] pyridinone, antimicrobial Activity

Introduction: Heterocycle-annulated pyrazoles have emerged as an important class of heterocyclic compounds due to their significant applications in pharmaceutical Chemistry. These compounds possess a number of interesting pharmacological activities such as hypotensive [1], antibacterial [2-5], hypoglycemic [6], antihypertensive [7, 8], coronary vasodilators [9] and antiviral [10, 11]. These compounds are also potential anti-asthmatic [12], anticancer [13-14], anti-allergic [15], and anti-HIV [16]. Literature search reveals that pyrazolo[3,4-b]pyridine derivatives act as phosphodiesterase -4 inhibitor and GSK-3 inhibitors [17-20]. In our earlier communication, we have reported the synthesis and in vitro antimicrobial evaluation of trifluoromethyl substituted pyrazolo(3,4-b)pyridine-6-one and their derivatives[21]. In this communication, we are reporting the synthesis and antimicrobial evaluation of 1-phenyl-3-aryl-4-methyl-1,7-dihydropyrazolo[3,4-b]pyridinone derivatives.

Material and Methods: Experimental: Starting materials were obtained from Merck and Sigma-Aldrich and used without purification. The standard strains were procured from the Gene Bank, Institute of Microbial Technology, Chandigarh, India and Microbial Type Culture Collection (MTCC). The NMR spectra were recorded on a Varian Mercury NMR spectrometer (¹H NMR (300 MHz) and ¹³C NMR (75.46 MHz)), and Bruker-500 NMR spectrometer (¹H NMR (500 MHz) using CDCl₃ or DMSO-d₆ solvent. Reactions are monitored by using TLC silica gel 60 F254 (Merck) plates.

Procedure: General procedure for synthesis of N-(3-Aryl-1-phenyl-1H-pyrazol-5-yl)-3-oxobutanamide, 2(a-b): Appropriate 5-amino pyrazole 1 a-b (1 mmole) and acetone diketene adduct (1 mmole) and 10 ml xylene were stirred at room temperature for 15 minutes and then refluxed for four hours. After completion of reaction (TLC check toluene: ethyl acetate 4:1) reaction mass was cooled and allowed to stand overnight. Solid obtained was filtered, dried and recrystallized by using ethanol to afford compound 2 (a-b) in 85-87% yield.

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आर्थिक समतेसाठी जमिन सुधारणा व जमिनीचे पुर्नवाटप

प्रा.डॉ.एस.के. पगार,* बाळासाहेब छबुजी आहेर**

*अर्थशास्त्र विभाग के.टी.एच.एम कॉलेज, नाशिक

**संशोधक विद्यार्थी के.टी.एच.एम कॉलेज, अभ्यास केंद्र नाशिक

प्रस्तावना :-

२१ व्या शतकात भारताचे कृषी क्षेत्र अनेक पातळ्यांवर झगडतांना दिसत आहे. सैद्धांतिक पातळीवरील चर्चेत आर्थिक विकासात कृषी क्षेत्राचे योगदान, त्याचे महत्व, कृषी क्षेत्राला पतपुरवठ्याची साधने, कृषी क्षेत्राचे बदलते संबंध यावर नेहमी देशव्यापी चर्चा घडल्या परंतु आजही शेती व शेतकरी याच्या समस्यांत विशेष सुधारणा झाली नाही. भारत हा कृषी प्रधान देश आहे. देशातील जवळपास ७० टक्के जनता शेती व्यवसायात गुंतली आहे. अलिकडच्या काळात शेती सारख्या महत्त्वपूर्ण व अत्यंत निष्काळ्याच्या विषयांकडे दुर्लक्ष झाल्याने शिवाय पर्यवरणाचा समतोलही दिवसेंदिवस बिघडत चालण्याने देशातील पाणि आणि शेती प्रश्न अधिकच गंभीर होत चालला आहे. कमी झालेले पावसाचे प्रमाण, अवेळी येणारा पाऊस, पाण्याच्या साठवणूक व वापरा सदर्भातील अज्ञान या मुळे शेती क्षेत्र अनेक समस्यांनी ग्रसले आहे. आधुनिक काळात निर्माण झालेल्या समस्यांवर उपाय योजना करण्यासाठी डॉ. बाबासाहेब आंबेडकरांचे कृषी विषयक विचारच शेती क्षेत्राला तारू शकतात.

भारतीय कृषी धोरणाच्या उत्क्रांतीचे जनक डॉ. बाबासाहेब आंबेडकरांनी देशाचा पोशिन्या असलेला शेतकरी सुखी असला पाहिजे यासाठीच विविध विकासात्मक धोरणे आखून शेती क्षेत्राला उद्योगाचा दर्जा देऊन विकास साधायला हवा, तसेच शेती क्षेत्रावरील अवलंबित्व कमी करून औद्योगिकरणकडे वळविले पाहिजे असे परखड मत बाबासाहेबांनी शंभर वर्षा पूर्वीच मांडले होते. देशातील शेतकऱ्यांची अवस्था दैनिय आहे. अपार कष्ट करूनही शेतकरी कुटुंब आर्थिक विवचेनेत आहे. या समस्या सोडविण्यासाठी बाबासाहेब प्रयत्नशील होते. म्हणूनच त्यांनी १९१८ मध्ये भारतातील अल्पभूधारक हा संशोधनपर निबंध लिहिला.

अभ्यासाची उद्दिष्टे :-

१. डॉ. बाबासाहेब आंबेडकरांच्या कृषी विषयी विचारांचा अभ्यास करणे.
२. सामाजिक न्यायासाठी बाबासाहेबांनी सुचविलेल्या जमिन सुधारणा पद्धतीचा अभ्यास करणे.
३. दुर्बल घटकांच्या विकासासाठी जमिन पुर्नवाटपाचा अभ्यास करणे.

संशोधन पद्धती :-

हा शोध निबंध लिहितांना संशोधकाने दुय्यम स्त्रोताचा वापर केला आहे. त्यासाठी मासिकेतील लेख वर्तमानपत्रातील बातम्या आणि संदर्भ ग्रंथ यांचा आधार घेतला आहे.

बाबासाहेबांचे शेती विषयीचे विचार :-

भारतीय शेती विषयी विचार मांडतांना बाबासाहेबांनी भारतीय शेत जमिनीच्या धारण क्षेत्राचा असणारा लहान आकार व त्यावरील उपाय, जमिन महसूल, सामुदायिक शेती, सहकार, महारवतन, खोती पद्धती या विषयी विचार व्यक्त केले आहे. स्पॉल हेल्डींग इन इंडिया अॅन्ड देअर रेमिडिज या निबंधात ते म्हणतात शेती हा

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Some Yogic Prsture & Yogic Way T - 10 ?

Yoga T-10 are Ten tips based on Yoga philosophy. They are some adoptable ways of thinking and practices, which will helps us to take one steps towards new age Yogic way of Life. They will helps us to understand the essence of life and how to develop our personality by improving our emotional quotient. They will helps to build positive attitude and to lead a disciplined and healthy life.

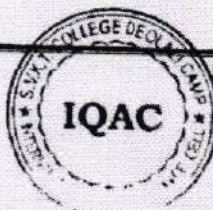
The content of this paper shows some adoptable ways of thinking and practices. These are twenty tips which can lead a person towards principles of Yogic Way of life.

Astang Yoga Marg and personality development

In Yoga Sutra text of sage Patanjali, the eight limbs are mentioned to achieve the highest goal of life, Samadhi or Moksha or salvation. The eight limbs of astang Yoga are : Yama, Niyama, Asana, Pranayama, Prathyahara, Dharana, Dhyana, Sanadhi, First two limbs, Yama (restrains) and Niyama (observances) are preparatory for making body mind complex conducive to higher yoga.

Five yainas: ahimsa (non violence), satya (truthfulness), asteya (non-stealing), brahmacharya (self control), aoarigraha (non-acquisition) are codes of social conduct. As man is a social animal these restraints have great importance in cultivating congeal relationship with family and friends and society. These moral imperatives are known as 'Mahavratas' which one has to practice universally without exception.

Many spiritual leaders have thought a lot about the simplification of these ideal principles and making them applicable for the common man, In today's world the objective of having a good health while using Yoga practices as therapy is more in the forefront than the spiritual aspect of yogic philosophy.



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Practical synthetic approach to related substances of Rivaroxaban; an anticoagulant drug substance

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Abstract

During the process development of an anticoagulant drug, Rivaroxaban (1), three related substances were detected by a gradient high performance liquid chromatography (HPLC) method. Liquid chromatography mass spectrometry (LC-MS) was performed to identify the molecular mass of these impurities. A detailed study was undertaken to characterize these impurities. Based on the spectral data (¹H NMR, ¹³C NMR and MS), these impurities were characterized as 2-[(2S)-2,3-dihydroxypropyl]-1H-indene-1,3(2H)-dione (impurity-1), [2-[(4-[(5S)-5-[(5-chloro-2-thienyl)carbonyl]amino)methyl]-2-oxo-1,3-oxazolidin-3-yl]phenyl]amino) ethoxy]acetic acid (impurity-2) and 5-chloro-N-[(2R)-2-hydroxy-3-[4-(3-oxomorpholin-4-yl) phenyl]amino]propyl] thiophene-2-carboxamide (impurity-3). A practical and efficient approach for the synthesis of these impurities with good yields and purities by HPLC is described in this report. The structures of the synthesized impurities (impurity-1, impurity-2 and impurity-3) were further confirmed by co-injecting these impurities with the standard Rivaroxaban sample containing all the three impurities. The retention times of synthesized impurities matches (co-eluted) with the retention times of the impurities present in the standard sample.

Keywords: Rivaroxaban, Related substances, Anti-coagulant drug, Synthesis.

Introduction

Rivaroxaban (1) is highly potent and orally active direct factor Xa (fXa) inhibitor drug developed by Bayer used for treatment and prevention of various thromboembolic diseases, in particular pulmonary embolism, deep venous thrombosis, myocardial infarction, angina pectoris, reocclusion and restenosis after angioplasty or aortocoronary bypass^{1,2}. This drug was approved under the trade name of Xarelto® by various regulatory authorities like United States Food and Drug Administration, Health Canada and the European commission³. In literature⁴⁻⁶ many HPLC and LC-MS methods has been reported for the determination of potential impurities in rivaroxaban (1) but study towards the identification and synthesis of impurities has not been reported. This impurity profiling study will be of immense importance for process development chemist as well as analytical development chemist to understand the potential impurities in 1 (Figure-1). Routine analysis of drug substance or drug product at Quality Control (QC) department requires sufficient quantities of related substances for quantitative estimation to ensure the control of these impurities before their release as per ICH guidelines⁷. Thus, it is essential and important to establish the facile and robust synthesis for the related substances and their characterization during drug development activity.

Recently we have reported sustainable and efficient process for the production of Rivaroxaban (1) but synthesis and

characterization of impurities was not covered⁸. Sample of Rivaroxaban (1) generated during process development was analyzed using the established HPLC method wherein three impurities with area percentage ranging from 0.02 to 0.30% were detected at relative retention times (RRT's) 0.25, 0.37 and 0.81 with respect to retention time of 1. To commercialize an active pharmaceutical ingredient (API), it is mandatory for the manufacturer to identify all the unknown impurities that are present in API at the level of even blow 0.05%.⁷ With this background, identification, synthesis and characterization of impurities present in rivaroxaban (1) has been undertaken and the outcome of the study is reported herein.

Experimental

All reagents, solvents, and processing aids are commercial products. ¹H NMR and ¹³C NMR spectra were recorded in DMSO-*d*₆ and CDCl₃ using Bruker Avance 300 MHz FT NMR spectrometer; the chemical shifts are reported in δ ppm relative to TMS. LC-MS and mass spectra were performed on Shimadzu Nexara 2020. Related substance purity was monitored by high performance liquid chromatography (HPLC) on Agilent Technologies 1260 series.

HPLC Method for calculating the chemical purity: Column: Zorbax SB-CN, (250 x 4.6 mm ID), 5μ; Mobile phase A: phosphate buffer (0.01M potassium dihydrogen orthophosphate, 0.005 M 1-heptane sulphonic acid sodium salt, triethylamine,

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SYNTHESIS AND *IN VITRO* ANTIMICROBIAL EVALUATION OF NOVEL TRIFLUOROMETHYL SUBSTITUTED PYRAZOLO [3,4-B]PYRIDINE 6-ONE DERIVATIVES

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ABSTRACT

A series of novel trifluoromethyl substituted pyrazolo[3,4-b]pyridine -6 one derivatives have been synthesized using the catalytic amount of p-Toluene sulphonic acid in refluxing ethanol. IR, ¹H NMR, ¹³C NMR and HRMS data elucidated the structures of the all newly synthesized compounds. All newly synthesized compounds were screened for their antimicrobial activity towards Gram-positive and Gram-negative bacterial strains and antifungal activity towards *C. albicans*, *F. solani*, *A. niger* at various concentration. Results showed that majority of compounds have significant antibacterial and antifungal activity. Compound 4a and 4b found to have excellent antibacterial activity, while compound 4a and 4d have excellent antifungal activity.

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Investigation of Mechanistic Pathway for Trimethyl Borate Mediated Amidation of (*R*)-Mandelic Acid for the Synthesis of Mirabegron, an Antimuscarinic Agent[‡]

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Abstract

The present work describes investigation of mechanistic pathway for trimethyl borate mediated amidation of (*R*)-mandelic acid (**3**) with 4-nitrophenylethylamine (**2**) to provide (*R*)-2-hydroxy-*N*-(2-(4-nitrophenyl)ethyl)-2-phenylacetamide (**4**) during mirabegron synthesis. Plausible reaction mechanism is proposed by isolating and elucidating the active α -hydroxy ester intermediate **16** from the reaction mass. Trimethyl borate mediated approach proved to be selective in providing **4** without disturbing α -hydroxyl group and stereochemistry of the chiral center, and is also a greener, more economic and production friendly over the reported methods. The developed approach is rapid and efficient for the preparation of **4** with an overall yield of 85–87% and around 99.0% purity by HPLC at scale.

Keywords: Trimethyl borate, amidation, α -hydroxy ester, antimuscarinic drug, mirabegron

1. Introduction

Mirabegron (**1**), chemically known as 2-(2-amino-1,3-thiazol-4-yl)-*N*-(4-(2-((2*R*)-2-hydroxy-2-phenylethylamino)ethyl)phenyl)acetamide, is a selective agonist for the human beta 3-adrenoceptor,¹ approved for the treatment of overactive bladder (OAB) syndrome.² It exhibits novel mechanism of action compared to other antimuscarinics by improving the storage capacity of the bladder without inhibiting bladder voiding.³ The drug developed by Astellas Pharma was approved by the United States Food and Drug Administrative (US-FDA) in June 2012 and by European Medicines Agency in December 2012.⁴

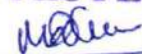
The first generation syntheses,⁵ reported two synthetic approaches for **1** (Scheme 1, route a and b) wherein both the approaches follow opening of epoxide ring of the (*R*)-styrene oxide (**8**). The first approach (Scheme 1, route a) involves nucleophilic addition of **2** on **8** to obtain nitro

amine **5a**. The amino group of **5a** is protected with di-*tert*-butyl-dicarbonate (Boc₂O) to give **5b** which is then reduced using Pd/C to yield aniline derivative **6a**. Aniline **6a** is further condensed with thiazole acid **7** to obtain amide intermediate **1a**. Removal of Boc protection group of **1a** using HCl furnished di-hydrochloride salt of **1** with an overall yield of around 8%. In the second approach (Scheme 1, route b), condensation of (4-aminophenyl)acetonitrile (**9**) and thiazole acid **7** is carried out in the first step, whereas advanced intermediate **11a** is reacted with epoxide **8** in penultimate step to provide **1**. However, detailed synthetic procedure for the route b is not provided in the report. Both of these approaches have several disadvantages such as extensive use of protecting and de-protecting sequences, expensive (*R*)-styrene oxide (**8**) as the starting material, and poor yields for epoxide ring opening reactions.

The second generation synthesis,⁶ (Scheme 1, route c) reported for **1** exploited commercially available (*R*)

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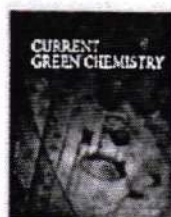
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Practical and Green Process for the Synthesis of Ivabradine Hydrochloride Through an Efficient Control of Process Impurities

Author(s): Anil C. Mali, Vijayavithal T. Mathad*, Dattatray G. Deshmukh, Vijay J. Medhane .

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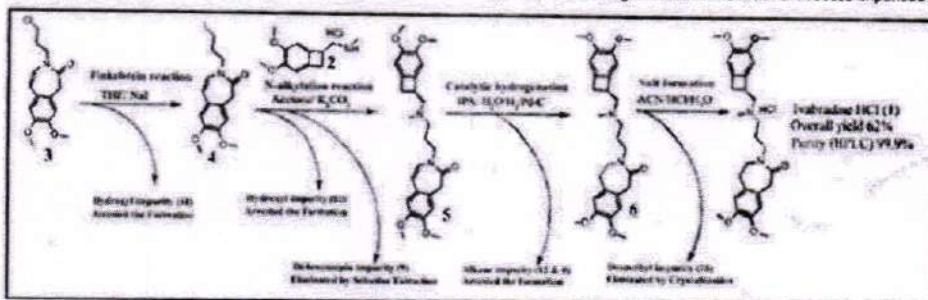
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Graphical Abstract:**ATTESTED****PRINCIPAL**

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Abstract:

Background: Synthetic processes reported for ivabradine hydrochloride (1), a heart rate lowering drug (an antianginal agent), are inefficient and uneconomical at an industrial scale due to their inability to control the formation of process related impurities. Generation of huge amount of solvent and solid waste due to repeated purifications and/or chromatographic purifications to eliminate impurities makes them industrially unsuitable hence requires the development of practical and greener process for 1.

Method: Based on the spectral analysis and synthetic route followed for 1, the structures for the impurities were identified and confirmed by their synthesis. Evaluated the genesis of these impurities based on the mechanistic understanding of the reaction pathways and established suitable strategies to eliminate/ minimize by optimizing the process parameters. The greenness and productivity of newly developed process were determined using process evaluation benchmarks such as process mass intensity (PMI), e-factor, atom economy, and volume time output (VTO).

Results: Established process delivered greener, productive and efficient method for 1 with an overall yield of around 62.0% and HPLC purity of >99.9%.

Conclusion: An efficient, economic and industrially feasible process for the synthesis of 1 is established which not only controls the formation of impurities but also minimizes the aqueous, organic and solid waste substantially to achieve the greener and productive process.

Keywords: Antianginal drug, benzazepin, finkelstein reaction, impurity profile, ivabradine, polonovski reaction.

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Evaluation of plant growth promoting attributes of rhizobacteria (PGPR) isolated from soybean (*Glycine max.* L.) Cultivated in fields irrigated with effluent water

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Abstract

Municipal and industrial effluents contain the large share of fresh water which is discharged into the rivers and other water bodies. It is common practice of using such water for irrigation of agricultural lands near the urban area. For bioremediation of soil quality, soil-dwelling microbes play the key role without any side effects. Soybean is cultivated widely for the rich source of seed oil and proteins. Ten Plant Growth Promoting Rhizobacteria (PGPR) were isolated from such soils of soybean rhizosphere. The four isolates have shown good percentage of tolerance to heavy metals and salt. These isolates have also shown plant growth promoting traits like phosphate solubilisation, nitrogen fixation, IAA, siderophore, HCN, and ammonia production. These isolates can be used in the form of consortium for a bioinoculant formulation to augment yield of soybean and to mitigate the adverse impact caused by pollutants.

Keywords: PGPR, effluents, heavy metals, rhizosphere, siderophore assay

1. Introduction

Environmental pollution is an extremely important issue today, affecting every biotic community in multiple ways. In developing as well as underdeveloped countries, industrial effluents are released directly or indirectly into natural water resources, mostly without proper treatment, thus creating a serious threat to the environment. This wastewater composed mainly of phosphorous, nitrogen, organic matter, heavy metals and inorganic salts in addition to suspended and/or dissolved solids and microscopic organisms. The untreated effluent is discharged into stream and water bodies. This damages the normal aquatic life and harmfully affects the quality of ground water table of the locality if allowed to settle into the ground for a prolonged period [14, 18]. These pollutants interfere with physiological activities of plants such as photosynthesis, gaseous exchange, and nutrient absorption and cause overall reduction in plant growth and yield. The lack of enough awareness, economic constraints and poor implementation of laws are the main reasons for the insufficient progress in this issue. It is now realized that there is need to conserve the environment by preventing any further habitat destruction, species extinction and also to restore an undisturbed environment. Due to their toxic effects on plants, animals and human beings, heavy metals and inorganic salts released from different industries are kept under one of the major environmental pollutant category [8].

Bioremediation is one of the wellknown and effective alternatives for reduction of the toxicity caused by different pollutants like heavy metals, inorganic salts etc. There are the variety of soil dwelling microbes now known to the human being who exhibit this potential to tolerate high concentrations

of heavy metals and other pollutants that would normally cause severe toxicity symptoms in higher plants. Isolation and use of microorganisms from such contaminated soils and their use for ameliorating the natural quality of soil from the contaminated site is gaining wide importance today. These bacteria colonize in and around roots of plants are called as rhizobacteria. These are also referred as plant growth promoting rhizobacteria (PGPR or PGPB) [2]. PGPR provide benefits to plant by the variety of direct and indirect mechanisms [20]. They directly promote plants growth by supplying nutrients (e.g. via the fixation of atmospheric nitrogen (N₂), phosphorous (P) solubilisation, segregation of iron (Fe) by siderophores, phytohormone synthesis (e.g. indole-3-acetic acid), suppression of plant pathogens [3], and by lowering the host's ethylene level due to ACC deaminase activity [11, 16]. Apart from these activities, there are various free-living rhizospheric bacteria that can be applied to heavy metal and salt polluted soils to mitigate lethal effects of heavy metals on the plants. Various strains of *Pseudomonas fluorescens* play a key role in the bioremediation of heavy metals [7, 22]. The *Pseudomonas sp.* also plays the vital role in the utilization of heavy metals. The several mechanisms have been developed by growth promoting rhizobacteria for their survival under metal stressed environment. These include mobilizing or transforming metals into inactive form to allow the uptake of heavy metal ions [13].

Soybean (*Glycine max* (L.) Merrill) is a leguminous plant, occupying large acreages of land worldwide for its rich content of edible oil and proteins. Drastic climatic changes brought irregularities in the monsoon in India. Due to this availability of fresh water is declining in the years for



Ecological Studies on Khadki Pond A Pune (M.S.) with Reference to Algal Blooms

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Abstract

A dense growth of planktonic algae often involving just one or few species and usually imparting a distinct colour to the water body is referred to as "Algal blooms" Blooms generally seen to occur when the water is sufficiently rich in dissolved nutrients. Bloom formation is attributed to the algal genera belonging to the classes Bacillariophyceae, Chlorophyceae, Cyanophyceae, Dinophyceae, Euglenophyceae.

In the present study of the pond from Khadki (pune) region the auther came across three occasions of algal blooms. from Nov.93 to Feb.94 there was abloom of *Closterium* which replaced by a bloom of *Oscillatoria* only in the single month of April 94. Studies of this pond was conduced to determine the occurrence of algal blooms in relation to various physico-chemical parameters. The possible conditions for the bloom of *Closterium* in the pond appeared as increased temperature; high level of biochemical oxygen demand, bicarbonates, hardness and sulphates. Whereas during the bloom of *Oscillatoria* low biochemical oxygen demand, tremendous increase in the sulphate concentration, increase in the hardness of water with moderate level of phosphate were noted.

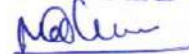
Key word-Algal blooms, *Closterium*, *Oscillatoria*, Khadki pond, physico-chemical parameters.

Introduction

Algae are very diverse and found almost everywhere on the planet. They play an important role in many ecosystems, including providing the foundation for the aquatic food chains supporting all fisheries in the oceans and inland, as well as producing about 70 percent of all the air we breathe.

Algae are the important part in the food web and provide shelter to other organisms. Thus they are the major part in aquatic ecosystem. Algae grow in different habitat and indifferent location but it is generally cosmopolitan in distribution and grow almost everywhere in the World. They play a crucial role in the aquatic ecosystem to absorb nutrients, toxic material, heavy metals and convert it into simplest form. They prefers the

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DECOLORIZATION AND DETOXIFICATION OF TEXTILE DYES AND EFFLUENT WITH A LACCASE ENZYME FROM *TRAMETES HIRSUTA*

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Abstract:

A large group of chemical dyes are manufactured on an industrial scale with an annual production of over 7×10⁵ metric tons. Reactive dyes are important chemical pollutant from textile industries. These dyes are discharged from textile and dye industries directly into water bodies and responsible for toxicity and carcinogenicity. The species of white rot fungi, *T. hirsuta* was evaluated for its ability to decolorize dyes, reactive pink and reactive and direct effluent. Laccase is lignolytic enzyme extracellularly secreted by white rot fungi. The laccase activity was measured using both solid and aqueous state assays. The effective decolorization was started after 72 hrs of incubation, with different concentrations 5 mg/l, 10mg/l, 15mg/l, 20mg/l & 50mg/l & complete decolorization was observed in higher concentration within 9 days of incubation. A toxicity study shows that effluent after treatment was less toxic as compared to untreated effluent. The absence of zone of inhibition on agar plates indicated that the fungal degraded dye metabolites are nontoxic to beneficial micro-flora. Therefore, *T. hirsuta* has promising potential in color removal from textile wastewater containing reactive dyes.

Keywords: Reactive dyes; decolorization; *Trametes hirsuta*; detoxification

INTRODUCTION:

Various chemical substances discharged from the industries become a persistent environmental contaminant. In our day-to-day life a lot of chemicals including dyes are manufactured due to industrialization & urbanization. Textile processing industries were found in most of the countries & their numbers have been increased. In textile industries, color is applied to finished product through dyeing, resulting in the generation of different wastewaters. Textile industries release large quantity of intensely colored & toxic effluent, which cause serious environmental pollution. The dyes includes such as acidic, reactive basic, disperse, azo, diazo, anthraquinone. Reactive dyes are most common dyes because of many advantages such as operating at mild conditions, give bright colors & stable structures. Reactive dyes are characterized by azo bond's (N=N) & used to dye cellulose fibre. The color of azo dyes is due to the presence of azo bond associated with chromophores. Effluent from industries containing reactive dyes causes serious environment pollution because presence of such dyes in water is highly visible & affects their transparency & aesthetic even if the concentration of the dyes is low.

White rot fungi are basidiomycetes that are capable of degrading a ligno cellulose substrate. They are called white rot because the degradation process results in a bleaching of wood substrate. Fungi are important organisms that have high tolerance to toxic environment making them ideal to use for bioremediation

process. Three types of enzymes are produced by white rot fungi, Lignin peroxidase (Lip), Manganese-dependent peroxidase (Mnp) & Laccase (Lac).

Laccase, EC 1.10.3.2, p-diphenol: oxygen oxido-reductase, is part of larger group of enzymes termed the Multi Copper Oxidases (MOC) (Komori et al., 2009) belonging to the group of blue-copper proteins. This enzyme is found in many organisms, including plants, bacteria fungi & human. This enzyme is generally extracellular & catalyzes the oxidation of several phenolic compounds, aromatic, amines, thiols & some inorganic compounds using molecular oxygen as electron acceptor. Fungal laccases have been confirmed for their ability to degrade several azo dyes.

The aim of the present work was to exploit biodecolorization of reactive black & reactive pink by *Trametes hirsuta* with following objectives: to assess the ability of fungal cultures to decolorize & degrade the dye, the actual dye industry waste, confirmation of degradation of dye & to assess the toxicity of degraded products.

MATERIAL AND METHODS:

The fungus, *T. hirsuta* was isolated from soil. The solid medium used for fungal growth contained per liter: 10 g of malt extract, 4 g of yeast extract, 4 g of glucose and 20 g of agar (pH 5.5).

Dyes:

Reactive dyes are the dyes, which are mostly used in the textile industries. The following dyes

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Spray Pyrolytic Deposition of Pristine and Ag doped Iron Oxide Thin Films

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Abstract

Iron oxide in film form has emerged as a technologically important material. Analytical grade iron nitrate, $Fe(NO_3)_3 \cdot 9H_2O$ precursor was dissolved in double distilled water to make 0.1M solution. The solution was sprayed onto preheated ($350 \pm 5^\circ C$) glass substrates, in a chamber. The spray gun to substrate distance was kept at 22 cm. The spray gun was moved at 2 cm/sec to and fro in horizontal direction to ensure uniform spraying of solution. The reddish brown colour films were obtained by spraying ~ 20 ml solution. For doping the aqueous silver nitrate $AgNO_3$ precursor solution was employed by maintaining the same substrate temperature. Analyses of the deposited films by X-ray diffraction, scanning electron microscopy, optical absorption studies have been carried out.

Keywords: Iron oxide, Hematite, Film, Spray Pyrolysis, Silver Doping

INTRODUCTION

Solar hydrogen is environmentally benign and sustainable energy carrier. It is predicted to replace conventional fossil fuels in near future. Hydrogen can be produced by water cleavage under the action of light radiations. Amongst the many possible photo electrodes (PE) such as TiO_2 , ZnO , Cu_2O many investigators have reported on studies related to them. Iron oxide: $\alpha-Fe_2O_3$, referred to as hematite is promising PE material amongst them, due to its abundance it is low cost material. Among the iron oxides Fe_3O_4/Fe_2O_3 are important member which is studied widely in magnetism [1-3], catalysis [4-7], sensors [8,9], biological applications [10-12], and so on. For recent decades, synthesis and performances of nano-structured iron oxides have been carried out extensively. Metal with iron oxide may produce new material with novel chemical and physical properties that each single one cannot possess, which can yield novel performances in many technological applications [13-16] So great deal work on Fe_2O_3 composites or hybrids doped with noble or other transition metals have been attracted strongly attention recently because of their broadened properties and potential applications of nano structured Fe_2O_3 [17-20]. Among these composites Ag/Fe_2O_3 is used in catalysis [21-23], sensors [24], magnetic properties [25]. Pd or Pt/ Ag/Fe_2O_3 employed as catalyst [19, 26-28]. Approximately 38 % of solar radiation [38] can be utilized by hematite which is having narrow band gap of 2.2 eV. However, its low electrical conductivity and high rate of electron-hole recombination results into poor photo-electrochemical (PEC) response. In order to overcome the difficulty of this poor PEC behaviour and improve the performance thin film structure, nano-structuring, doping etc. have been attempted. The present investigation deals with optimizing the preparative parameters for thin film preparation by versatile chemical solution spray technique. The

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GOODS AND SERVICES TAX AND ITS IMPACT ON INDIAN ECONOMY

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Introduction

Introduction of proposed Goods and Services Tax (GST) is to replace the existing multiple tax structures of Centre and State taxes. India is a federal country and both Centre and States have their own rights to collect taxes. Each State is independent in levying and collecting taxes. GST is not only desirable but imperative in the current economic environment. This is targeted to be a simple, transparent and efficient system of indirect taxation. It has been adopted by over 140 countries around the world. The responsibility of preparing a Design and Road Map for the implementation of GST was assigned to the Empowered Committee of State Finance Ministers (EC). In April, 2008, the EC submitted a report titled, "A Model and Roadmap for Goods and Services Tax (GST) in India", containing broad recommendations about the structure and design of GST. Calling it the "biggest tax reform since 1947" the Hon'ble Finance Minister Arun Jaitley has announced in the Union Budget, 2015 that GST will be introduced from April, 2016. The 122nd Constitution Amendment Bill, 2014, has been by the Lok Sabha to facilitate the introduction of proposed Goods and Services Tax (GST). A dual GST model for the country has been proposed by the EC. Under this model GST will have two components viz. the Central GST to be levied and collected by the Centre and the State GST to be levied and collected by the respective States. Central Excise Duty, Additional Excise Duty, Service Tax, and Additional Duty of Customs (equivalent to Excise), State VAT, Entertainment Tax (other than the tax levied by the local bodies), taxes on lotteries, betting and gambling and entry tax would be subsumed within GST.

Benefits of GST:

Benefits of GST shall accrue to all trade & industry, Government and consumers. Trade and industry shall benefit in terms of easy compliance, removal of cascading effect of taxes and enhanced competitiveness. The Government shall have better control on leakages, higher revenue efficiency, consolidation of tax base and it may be easier to administer and monitor the law. Consumers will also benefit from likely reduced prices and single transparent tax structure.

1. GST will end cascading effects:

This will be the major contribution of GST for the business and commerce. At present, there are different state level and centre level indirect tax levies that are compulsory one after another on the supply chain till the time of its final consumption.

2. Growth of Revenue in States and Union:

It is expected that the introduction of GST will increase the tax base but lowers down the tax rates and also removes the multiple point taxation. This will lead to higher amount of revenue to both the states and the union.

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GST: ISSUES AND CHALLENGES

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Introduction

The Goods and Service Tax is a single rate tax levied on the manufacture, sale and consumption of goods as well as services at a national level. In this system the GST is implemented only on the value added at every stage of production. This will ensure there is no cascading effect of taxes (tax on tax paid) on inputs that are used in manufacturing goods. 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 endeavor to generate tax revenues to support government expenditure on public services and infrastructure development. Cascading tax revenues have differential impacts on firms in the Economy with relatively high burden on those not getting full offsets. This argument can be extended to international competitiveness of the adversely affected sectors of production in the economy. Such domestic and international factors lead to inefficient allocation of productive resources in the economy. This Results in loss of income and welfare of the affected economy. Traditionally India's tax regime relied heavily on indirect taxes including customs and excise. Revenue from indirect taxes was the major source of tax revenue till tax reforms were undertaken during nineties. The major argument put forth for heavy reliance on indirect taxes was that the India's majority of population was poor and thus widening base of direct taxes had inherent limitations. Another argument for reliance on indirect taxes was that agricultural income was not subjected to central income tax and there were administrative difficulties involved in collecting taxes.

The differential multiple tax regime across sectors of production leads to distortions in allocation of resources thus introducing inefficiencies in the sectors

Of domestic production. With regard to India's exports, this leads to lack of International competitiveness of the sectors which would have been relatively efficient under distortion-free indirect tax regime. Add to this, the lack of full offsets of taxes loaded on to the fob export prices. The export competitiveness gets negatively impacted even further. Efficient allocation of productive resources and providing full tax offsets is expected to result in gains for GDP, returns to the factors of production and exports of the economy. The Government of India constituted a Task Force on implementation of Fiscal Responsibility and Budget Management Act, 2003 to chalk out a framework for fiscal policies to achieve

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GST Impact on Small & Medium Business

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Introduction of Goods and service tax (GST) is a landmark strategic measure for streamlining multiple indirect systems that warranted the GST. The GST has come into force on 1st July 2017. It was indeed significant tax reform in India, it has sailed a long voyage to reach the shore of the ocean of indirect tax system in India. The GST has been an amalgamation variety of indirect taxes that were existed for a long time in the Indian Economy. In India, GST was conceived in 2004 by the Task Force on implementation of the Fiscal Responsibility and Budget Management Act, 2003 (Kelkar Committee) while analyzing prevailing indirect tax system both at Central and State level. The Kelkar Committee observed that a tax reform of nationwide dual GST which would comprehensively tax the consumption of almost all goods and services in the economy would be able to achieve 'a common market, widen the tax base, improve the revenue productivity of domestic indirect taxes and enhance welfare through efficient resource allocation'. Integrated GST (IGST) which is equivalent to the sum of SGST and CGST. Though GST has raised much debate, discussions and prognostication and has become a ubiquitous part of trade and commerce glossary, the GST regime importantly solicits to establish the major issues a) Creation of a one-market economy that are instrumental for the development of the economy, present legal framework permits the fragmentation of markets due to the differential treatment of intra-state and inter-state transactions. This, coupled with the several tariff and non-tariff incentive schemes offered by states to attract investments, resulted in the structuring of supply chain models based on the optimization of indirect tax costs rather than other economic factors and best practice b) better transparency with hassle free input tax credit: GST is a value-added tax that will apply at each stage of value addition in a business value chain. However, to avoid any cascading impact, the regime would allow an input tax credit of the amount paid toward GST at the previous stage. This seamless credit availability is likely to improve the transparency between stockholders

Salient features of the GST model

Salient features of the proposed model are as follows:

- (i) The GST shall have two components: one levied by the Centre (referred to as Central GST), and the other levied by the States (referred to as State GST). Rates for Central GST and State GST would be approved appropriately, reflecting revenue considerations and acceptability
- (ii) The Central GST and the State GST would be applicable to all transactions of goods and services made for a consideration except the exempted goods and services.
- (iii) The Central GST and State GST are to be paid to the accounts of the Centre and the States individually.
- (iv) Since the Central GST and State GST are to be treated individually, taxes paid against the Central GST shall be allowed to be taken as input tax credit (ITC) for the Central GST and could be utilized only against the payment of Central GST.
- (v) Cross utilization of ITC between the Central GST and the State GST would not be permitted except in the case of inter-State supply of goods and services.
- (vi) Ideally, the problem related to credit accumulation on account of refund of GST should be avoided by both the Centre and the States except in the cases such as

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FINANCE COMMISSION AND FINANCIAL MANAGEMENT OF URBAN LOCAL GOVERNMENTS

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Introduction:-

India's decentralization initiative, in the form of Seventy-third and Seventy-fourth Amendments, poses challenges and offers opportunities. In addition to ensuring constitutional validity to local bodies, these legislations have also broadened the range of power and functions of local governments the provisions concerning to the constitution of State Finance Commissions (SFCs) aim to rationalize state-local fiscal relations, assume special significance. The states are required to constitute Finance Commissions, once in every five years, to recommend their legislatures, measures to improve the finances of the Panchayats. The State Finance Commissions have so far not been able to come up with comprehensive mapping of state resources. Accordingly their recommendations do not provide well-defined system for sharing of resources between state and local governments. The central finance commissions generate and use huge data before arriving at their recommendations. These recommendations are based on logical data analysis. But most of SFCs recommendations are adhoc in nature and the State Governments don't take them too seriously.

Objectives:-

- 1) To study the role of finance commission in strengthening Urban Local Bodies finance.
- 2) To study the framework of Municipal Financial Management.
- 3) To suggest recommendations for better financial management of Urban Local Bodies.

Research Methodology :- The study on "Finance Commission and Financial Management of Urban Local Governments" is a conceptual and descriptive research paper designed with help of secondary data.

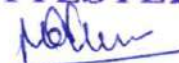
The Role of Finance Commissions in Strengthening ULB Finance :- The Amendment of Article 280 of the Constitution of India requires the Central Finance Commission to suggest measures needed to augment the consolidated fund of the states to supplement the resources of municipalities on the basis of the recommendations of the State Finance Commissions. The balance of functions and finances between the States and ULBs a provision has been made in the Constitution for the establishment of State Finance Commissions (SFCs) every five years (Article 243-1 as per the 73rd Amendment). The State Finance Commissions are expected to review the financial position of ULBs and to make recommendations regarding the principles of devolution of resources from the State Government to ULBs and the measures needed to improve their finances and functioning. It does not need much emphasis or explanation that the measures needed to improve the finances and functioning of ULBs imply much more than the fiscal devolution alone. It points to the improved practices of ULB management as a whole. It is a widely acknowledged fact that the different aspects of ULB management such as revenue optimization, cost-effectiveness, process reform & reengineering, transparency & accountability, people-centeredness, etc., are all interlinked and therefore need simultaneous and synchronous reforms. In a country of great diversity and multiplicity it is difficult to device standard formulae of ULB reforms. Hence, perhaps the best strategy of consolidating the wisdom on ULB reforms is to map the best practices in this sector and to attempt a generic analysis of these practices with a view to promote their replication and scale up. While it is necessary to explore the avenues of greater fiscal autonomy of ULBs it is equally necessary to build their capacities to handle the funds in a meaningful, effective and transparent manner. The financial management of ULBs is faced with an omnipresent challenge of balancing the economic growth with social justice. While focusing on the resource mobilization and public-private partnership for creation of better urban infrastructure and services, it is equally necessary to ensure that the infrastructure and services remain accessible and affordable to the urban poor. Often the enthusiasm of creating high-end infrastructure and services undermines the concerns of urban poverty thus creating a progressive social imbalance. Greater autonomy of ULBs in planning and expenditure also means their greater responsibility and accountability towards the citizens. Unfortunately, a large majority of ULBs, especially the smaller municipal councils, still lack in the basic systems, skills and capacities necessary for good urban management.

Framework of Municipal Finance Management: - The ever increasing needs of society coupled with changing global scenarios and growing population size, poses a challenge to Urban Local Bodies (ULBs). This is especially so with respect to issues such as poverty, inadequate infrastructure etc. These challenges call for more efficient, effective, transparent and accountable public service and reforms. In order to cope with these challenges, municipal

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IMPACT OF GST ON A FEW SELECTED SECTORS IN THE INDIAN ECONOMY

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Introduction:

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. Although there are many hurdles to be crossed before the implementation of GST the Central government reiterated its commitment towards the adoption of a 'flawless' GST for the survival of the India's economy in the face of increasing international competition consequent to globalization and liberalization. Despite the various impediments to the proposed transition, until the time GST is implemented, it would be worthwhile to assess its positive impacts on the various development areas viz. agriculture, manufacturing industry, MSME, housing, poverty reduction, employment, price level, EXIM trade, GDP, government revenue, etc Hence, an attempt is made in this paper to study the concept of goods and service tax and its impact on various development areas of the economy.

Impact of GST on a few selected sectors in the Indian Economy:

1. IT Sector:

Goods and Services Tax (GST) is arguably the most talked about fiscal form in recent times and India appears set to transition into a GST regime in the coming year. To recap, with a view to preserve the fiscal autonomy of the Central as well as State Governments, Indian lawmakers have proposed a dual GST structure in terms of which,

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प्रा.भास्कर दोळे

श्रीमती विमलाबेन खिमजी तेजुकाया महाविद्यालय,
देवनानी कॅम्प, नाशिक

साहित्यकृतीचे माध्यमांतर ही एक अत्यंत गुंतागुंतीची संकल्पना आहे. माध्यमांतर समजून घेण्यापूर्वी साहित्यप्रकाराची संकल्पना स्पष्ट करणे आवश्यक आहे. साहित्य म्हणजे 'सलित साहित्य' असे आपण समजतो आणि ललित साहित्यांतर्गत कविता, कथा, कादंबरी, नाटक, सलित लेख, चरित्र, आत्मचरित्र इ.चा समावेश करतो. ललित साहित्याच्या प्रकारामध्येही उपप्रकार केलेले दिसतात. उदाहरणार्थ, भावकविता, दीर्घकविता, पोवाडा, लावणी, खंडकाव्य इ. रूपभेद साहित्यात आढळतात. विषय आणि मांडणी नुसार हे विविध प्रकार, उपप्रकार केलेले दिसतात. पार्श्यात्य साहित्याशाखात साहित्यप्रकाराच्या सिद्धांताचा उपम प्लेटोने केलेल्या वर्णन आणि अनुकरण या प्रकारभेदात आहे. नाट्यात्म कविता ही व्यक्तीची अनुकृती करणारी होती, तर कथनात्म कविता व्यक्तीच्या कृतीचे वर्णन करणारी होती अँरीस्तोतलच्या भते महाकाव्य, शोकात्मिका, मुखात्मिका, या अनुकृतीच्या पद्धती अमून अनुकृतीचे माध्यम, अनुकृतीचे विषय आणि अनुकृतीची रीती यांच्यामुळे त्यांच्यात भिन्नत्व निर्माण होते. अँरीस्तोतल विवेचनातून साहित्याचे कथनात्मक आणि नाट्यात्म हे दोन मुलाकर स्पष्ट होतात. हेगेलने महाकाव्य, भावकविता आणि नाटक असे तीन रूपबंध मानले. त्याच्या भते महाकाव्य हे वस्तुनिष्ठ असते, भावकविता ही अत्मानिष्ठ असते, तर नाटकात महाकाव्य आणि भावकविता यांची तत्वे एकात्म झालेली असतात, म्हणजे त्यात वस्तुनिष्ठा आणि आत्मनिष्ठा यांचे मिश्रण झालेले असते.

सतराव्या अठराव्या शतकात साहित्यप्रकारांना अधिक महत्त्व होते. प्रत्येक साहित्यप्रकार हा दुनयापेक्षा निराळा असतो आणि त्यांची पृथाकता महत्त्वाची असते. साहित्यप्रकाराच्या सिद्धांतातून साहित्याचे व्यवस्थापन सुचवले जाते. हे वर्गीकरण संरचनेवर आधारित असते. थोडक्यात साहित्यप्रकाराची एक स्वतंत्र संरचना असते. ती काही प्रमाणात सवचिक असू शकते. साहित्यप्रकाराच्या सिद्धांताचे अभिजातकालीन आणि आधुनिक असे भेद करावे लागतात. अभिजातवादी सिद्धांत नियामक व आदेशात्मक असतात. साहित्यप्रकाराची पृथात्मकता सांभाळली जावी त्यात कसलीही भेसळ होऊ नये या कडे त्यांचा कटाक्ष असतो. आधुनिक साहित्यप्रकाराचा सिद्धांत वर्णनात्मक स्वरूपाचा व सवचिक असतो. तो लेखनावर बंधन लादत नाही. मुळात साहित्यप्रकाराचा सिद्धांत हे व्यवस्थापनासाठी असतात. ह्या व्यवस्थापनामुळेच आपण आपण सहजपणे कथा, कविता, कादंबरी, असे साहित्याचे वर्गीकरण करू शकतो. कोणत्याही साहित्यकृतीचा आस्वाद घेताना साहित्यकृतीच्या प्रकारचा संदर्भ आपल्या मनात असतोच. वाचन करताना मेल्याप्रकाराची चौकात मनात अमतेच, म्हणून कवितेच्या वाचनात आपण कथेचीचौकात गृहीत धरत नाही. कधी कधी साहित्यकृतीचे वाचन करताना साहित्यप्रकारातील कृतींशी साम्य असल्याचे जाणवते. त्याला कुलासाम्य असे म्हणतात. निरनिराळे साहित्यप्रकार हे बंदिस्त रूपे नसून त्यांच्यात साम्याभेद्युक्त नाते अमते हे विटगेनस्ट्रानचे म्हणणे खरेच मानावे लागते. त्यामुळेच साहित्याचे प्रकारांतर संभवते हेही स्पष्ट होते. पण आपण इथे एक गोष्ट समजून घेतली पाहिजे की साहित्याचे प्रकारांतर आणि माध्यमांतर ह्या एकमेकांपेक्षा भिन्न आहेत. अनेकदा आपण साहित्याच्या प्रकारांतालाच माध्यमांतर असे समजतो.

ATTESTED

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मराठ्यांच्या स्वातंत्र्य युद्धातील ताराबाईचे योगदान

डॉ. मंगला अरूण निकुंभ

एस.व्ही.के.टी. कॉलेज,

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प्रस्तावना :

प्राचीन काळापासून मराठा स्त्रिया आपल्या पतीच्या गैरहजेरीत सर्वे व्यवहार पहाताना दिसून येतात. त्याच प्रमाणे पतीला त्यांच्या कामात त्या मदत करीत होत्या. जहागिरी असेल तर त्यांचे व्यवहार नोकरबागांकडून करवून घेणे. जमीनदारीमधील शोतीची कामे करवून घेणे, अन्य व्यवसाय उदा. जनावरे, दुध दुभत्याचे व्यवसाय वगैरे बाबीसुद्धा स्त्रिया चांगल्या प्रकारे हाताळीत असत. अनेक मराठा स्त्रिया पुढे येण्यास त्यांना अशा प्रकारे संधी मिळत गेली. त्यांचे या महिलांनी सोने करून त्या मराठा इतिहासात अजरामर झालेल्या आहेत. मराठा कालखंडातील जिजाऊ साहेब, येसुबाई, ताराबाई यांनी युद्धाचे प्रशिक्षण घेऊन राज्य कारभार केल्याचे दिसून येते. त्याचप्रमाणे अहिल्याबाई होळकर, ताराबाई शिंदे, राणी लक्ष्मीबाई वगैरे मराठा स्त्रियांनी वेगवेगळ्या क्षेत्रांमध्ये आपल्या कर्तृत्वाचा ठसा उमटविला. त्याप्रमाणे ताराबाईने आपल्या कर्तृत्वाचा ठसा उमटविलेला दिसून येतो.

राजकीय स्थिती :

मराठी स्वातंत्र्याच्या काळात समाजात राज्यकर्ते, शासनकर्ते, सरदार, जहागीरदार, वतनदार असा उच्च वर्णांच्या एक वर्ग निर्माण झाला होता. त्या घरातील राहणी श्रेष्ठ वर्गाची असे. पुरुष व स्त्रियाही विद्याचार संपन्न असत. सौजन्य आणि विनयशीलता यात कमी पडत नसत. असे दुरत्वाने का होईना पण काही काळ गादीचे संरक्षण करण्याची जबाबदारी स्त्रींवर येण्याची शक्यता होती. त्यामुळे राजघराण्यातील स्त्रियांना काही प्रमाणात युद्धाचे किमान संरक्षणाचे, राजनीतीचे शिक्षण मिळत होते. आणि ज्यांना गादी चालविण्याची संधी मिळाली त्यांनी कर्तृत्वाने, मुत्सदीपणाने आपली जबाबदारी पार पाडलेली दिसून येते.

ताराबाईचे नेतृत्व :

ताराबाई ही कर्तृत्ववान व राजकारणी होती. इ.स. १६९० पासून मराठे राज्याचे चातुर्धाने रक्षण करणारा राजाराम इ.स. १७०० मध्ये मृत्यू पावले. पोरके झालेले मराठी राज्य आता आपल्याला सहज मिळेल असे औरंगजेबाला वाटले. अशा आणुबाणीच्या प्रसंगी असामान्य कर्तृत्व दाखवणाऱ्या राजारामाच्या पत्नीचे वय अवघे २५ वर्षे होते. मराठी राज्याची धुरा तिने आपल्या खांद्यावर घेतली. राजारामाच्या हयातीतच राजकार्य घडामोडीमध्ये भाग घेत असे. अतिशय बुद्धिमान व चतुर स्त्री होती. तिने पतीच्या हयातीतच आपल्या लष्करी व पुलकी कारभारातील चुणूक दाखविली होती. तिला सैन्याचे डवपेच समजत असे आणि राज्यकारभाराची सुत्रेही हालविता येत असे.

ताराबाईचे युद्धतंत्र :

ताराबाई या कर्तव्यगार, हुशार व युद्धतंत्राची माहिती असणाऱ्या होत्या. ताराबाईने युद्धाचे रणांगण सर्व हिंदुस्थानभर पसरविले आणि या लढाया अत्यंत जलदगतीने व विद्युत्गतीने करण्याचे एक नवीनच युद्धतंत्र निर्माण केले. मराठ्यांचे सैन्य सर्व सामर्थ्यानिशी एखाद्या वादळी इंद्रावालासारखे मोगली सैन्यावर अचानकपणे कोसळून, शत्रुपक्षांमध्ये धबधबट व भोतीचे वातावरण निर्माण करून, त्यांचे मनोधैर्य नाहिसे करीत असे व त्यांना दूरवर पळवून त्यांचा पाठलाग करून पराभव करणे हे या युद्धतंत्राचे मुख्य सूत्र होते. या नवीन युद्धतंत्रावर व जलद हालचालीवर औरंगजेब काबू



जी.एस.टी.एक कर : एक बाजारपेठ

प्रा.श्रीमती अश्विनी पी.निसाळ

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एस.डी.के.टी.आर्ट्स, सायन्स आणि कॉमर्स कॉलेज, देवळाली कॅम्प, नाशिक

१ जुलै २०१७ रोजी संपूर्ण भारतात जीएसटी लागू झाला. जगात सर्वप्रथम जीएसटी फ्रान्स मध्ये १९५४ ला लागू झाला होता. हा जीएसटी भारतात लागू करण्याचा प्रस्ताव विजय केळकर समितीने केला होता. भारतात जीएसटी सर्वप्रथम आसाम राज्यात लागू झाला. जीएसटी परिषदेत एकूण ३३ सदस्य संख्या आहे. १२२वा संविधान संशोधननुसार व अॅक्ट १०१ नुसार जीएसटी लागू झाला. जीएसटी बिलवर राष्ट्रपतींनी ८ डिसेंबर २०१६ रोजी मंजूरी दिली. जीएसटी परिषदेचे मुख्यालय दिल्ली येथे आहे. या परिषदेचे अध्यक्ष वित्तमंत्री आहे.

जीएसटी बदल संपूर्ण देशात एक उत्सुकता निर्माण झाली होती. आज केंद्र सरकारकडून वेगवेगळ्या वस्तुवर उत्पादन शुल्क, अतिरिक्त सीमा शुल्क, अतिरिक्त सीमा शुल्क अशा प्रकारचे वेगवेगळे कर लावले जात होते. मात्र जीएसटीमुळे सर्व कर जावून फक्त एकच कर 'जीएसटी' जो सर्व वस्तु व सेवांवर आकारला गेला.

जीएसटी म्हणजे काय ?

वस्तु व सेवांवर हा एक अप्रत्यक्ष म्हणजे Indirect Tax असणार आहे. सर्व वस्तु व सेवांवर एकसमान कर विविध कर संपुष्टात येतील व त्यासाठी एकच करप्रणाली लागू होईल.

जीएसटी करप्रणालीचे फायदे :

- १) उत्पादनाच्या किंमती कमी होती.
- २) देशभरात वस्तुंची किंमत एकसमान होईल.
- ३) व्यवहारात पारदर्शकता येईल.
- ४) देशाचे एकूण उत्पन्न (GDP) वाढण्यास मदत होईल.

जीएसटी करप्रणालीचे तोटे :

- १) राज्य सरकारला मिळणारे कर उत्पन्न कमी होईल.
- २) पेट्रोल, डिझेल, केरोसीन आदि उत्पादनाला पाच वर्षे जीएसटी लागू होणार नाही.
- ३) सेवा महागणार

जीएसटीचे दोन प्रकार

- १) सेंट्रल जीएसटी (CGST)
- २) स्टेट जीएसटी (SGST)

ATTESTED

Neesha

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New Report of Some RET Plants from Nashik District

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Abstract: The present paper is a part of research undertaken with an objective to explore and identify wild ornamental plants, Enumerate exotic and invasive plants, to conserve some wild ornamental plants and to report plant species new to the study area. During the excursions carried out in the two tehsils viz Nandgaon and Chandwad two RET plants namely *Commiphora wightii*, *Lepidagathis bandraensis* were reported as new additions to flora of Nashik district and one *Striga indica* was reported as an addition to flora of Maharashtra State.

Keywords: New report, RET Plants, Nashik District, Maharashtra

1 Introduction

The study area comprises of Chandwad and Nandgaon tehsils of Nashik District which lies in Northern Maharashtra. The area has been studied by many workers and Flora of Nashik District has been published by P.V.Narasimhan and Sharma B.D. More recently Jadhav .D.G. has reported many plants as a new report for the district. Kumar Vinod Gosavi *et al* have reported a grass species namely *Silentrivalleya chandwadensis* as a new species. During our field surveys carried in the study area many taxa were photographed, after proper identification it was found that some plant species were not

Kokate and Gaikwad

reported in the previous works. So these two species *Commiphora wightii* (Am) Bhandari and *Lepidagathis Bandraensis* Blatt are reported as new record for Nashik district and one *Striga indica* K.M.Prabhu as a new report to Maharashtra state.

2 Materials and Methods

Excursions were carried out to different parts of the study area. Plants were photographed and identified with the help of floras, referring research papers, and expert opinion.

Study Area –

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ATTESTED

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Characterization of Plant Growth Promoting Rhizobacteria Associated with Soybean (Glycin Max L.) Cultivated in Effluent Contaminated Soil.

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ABSTRACT:

Soybean is cultivated widely for the rich source of seed oil and proteins. It is common practice of using such water for irrigation of agricultural lands near the urban area. However, Industrial and Municipal effluents contain the large share of fresh water which is discharged into the rivers and other water bodies. Soil-dwelling microbes play the key role without any side effects on bioremediation of soil quality. Plant Growth Promoting Rhizobacteria (PGPR) were isolated from such soils of soybean rhizosphere. The two isolates have shown good percentage of tolerance to heavy metals and salt. These isolates have also shown plant growth promoting traits like phosphate solubilisation, nitrogen fixation, IAA, siderophore, HCN, and ammonia production. These isolates can be used in the form of consortium for a bioinoculant formulation to augment yield of soybean and to mitigate the adverse impact caused by pollutants.

Keywords: PGPR, effluents, heavy metals, rhizosphere, siderophore assay.

Introduction :

Environmental pollution is an extremely important issue today, affecting every biotic community in multiple ways. In developing as well as underdeveloped countries, industrial effluents are released directly or indirectly into natural water resources, mostly without proper treatment, thus creating a serious threat to the environment. This wastewater composed mainly of phosphorous, nitrogen, organic matter, heavy metals and inorganic salts in addition to suspended and/or dissolved solids and microscopic organisms. The untreated effluent is discharged into stream and water bodies. This damages the normal aquatic life and harmfully affects the quality of ground water table of the locality if allowed to settle into the ground for a prolonged period [14, 18]. These pollutants interfere with physiological activities of plants such as photosynthesis, gaseous exchange, and nutrient absorption and cause overall reduction in plant growth and yield. The lack of enough awareness, economic constraints and poor implementation of laws are the main reasons for the insufficient progress in this issue. It is now realized that there is need to conserve the environment by preventing any further habitat destruction, species extinction and also to restore an undisturbed environment. Due to their toxic effects on plants, animals and human beings, heavy metals and inorganic salts released from different industries are kept under one of the major environmental pollutant category [8].

Bioremediation is one of the well known and effective alternatives for reduction of the toxicity caused by different pollutants like heavy metals, inorganic salts etc. There are the variety of soil dwelling microbes now known to the human being who exhibit this potential to tolerate high concentrations of heavy metals and other pollutants that would normally cause severe toxicity symptoms in higher plants. Isolation and use of microorganisms from such contaminated soils and their use for ameliorating the natural quality of soil from the contaminated site is gaining wide importance today. These bacteria colonize in and around roots of plants are called as rhizobacteria. These are also referred as plant growth promoting rhizobacteria (PGPR or PGPB) [2]. PGPR provide benefits to plant by the variety of direct and indirect mechanisms [20]. They directly



PHYSICO-CHEMICAL OBSERVATIONS ON FIVE MICROCYSTIS BLOOMS LOCATED AT DIFFERENT LOCALITIES IN PUNE (M.S.) AREA

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Key words:-Algal bloom, *Microcystis*, physico-chemical parameters ,Pune region.

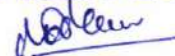
ABSTRACT : A dense growth of planktonic algae often involving just one or few species and usually imparting a distinct colour to the water body is referred to as "Algal Blooms". Bloom generally seen to occur when the water is sufficiently rich in dissolved plant nutrients. In the temperate region bloom formation take place in the season of summer and autumn when the weather is calm.

Microcystis aeruginosa (Kutz) is one of the most cosmopolitan bloom forming alga. In the present study five ponds of Pune region located at different geographic locations and altitude levels were investigated for survey of blooms of *Microcystis aeruginosa* (Kutz). Studies were conducted to determine the relation between various physico-chemical parameters and occurrence of *Microcystis* bloom. The chemical parameters selected for analysis were dissolved oxygen, free CO₂, pH, total hardness , total suspended solids ,sulphates, ortho-phosphates,chlorides.The results showed that in Pune waters the *Microcystis* blooms are not confined to any narrow range of physico-chemical conditions. Alkaline pH, high bicarbonates, organic matters appeared to be most favourable for *Microcystis* bloom to occur.

Introduction:

Five major blooms of *Microcystis aeruginosa* Kutz were investigated during the survey of algal blooms made by author. In which three permanent blooms of *Microcystis* were discovered from Dehu Road area. One of the largest blooms of *Microcystis* was observed in Bhima River, Khed (Rajgurunagar), while another bloom of *Microcystis* was noted in a Sinhadgad fort which lies on a hill having an altitude of about 1440 meters from sea level.

ATTESTED



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Development and Validation of Mercurimetric Titration Method for Determination of Chloride Concentration in Milks Using Novel Reagent

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ABSTRACT:

An indirect mercurimetric titration method is developed and validated for selective determination of chloride concentration in the milks using mono-thiocyanato-mercury(II) nitrate $[\text{Hg}(\text{SCN})\text{NO}_3]$ novel reagent. The method is based on standard addition of chloride in the milk sample. In the first step, the reagent $\text{Hg}(\text{SCN})\text{NO}_3$ was prepared *in-situ* by mixing equivalent quantities of mercury(II) nitrate $[\text{Hg}(\text{NO}_3)_2]$ and potassium thiocyanate $[\text{KSCN}]$ in presence of iron(III) nitrate $[\text{Fe}(\text{NO}_3)_3]$ indicator. Then, a measured amount milk sample was added into the known and excess amount of $\text{Hg}(\text{SCN})\text{NO}_3$ reagent and the surplus $\text{Hg}(\text{SCN})\text{NO}_3$ was measured by back titration against standard KSCN solution. Similarly, the second step was performed with another identical milk sample spiked with the measured amount of chloride. The chloride and $\text{Hg}(\text{SCN})\text{NO}_3$ reagent were found to be reacting in the 1:1 stoichiometric ratio. So the amount chloride in the milk was determined from the amount of $\text{Hg}(\text{SCN})\text{NO}_3$ utilized, which was then determined by performing a similar blank titration. The statistical treatment to the experimental data obtained by this method indicates that, the method is precise and accurate. The organic matter such as proteins, glucose, fructose, etc. and inorganic ions such as phosphate, sulfate, etc. present in the milk sample did not interfere with the measurement of chloride by this method. The proposed method of determination of milk chloride is simple, reliable and inexpensive. It also allows the determination of milk chloride at acidic pH with the stable and distinctly visible end point. The standard addition of chloride (amplification) also increases the sensitivity for chloride determination in milk at a trace level.

Keywords: Milk Analysis, Chloride Concentration, Mercurimetric Titration, Mono- thiocyanato-mercury(II) Nitrate, Standard Addition Method

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HYDROBIOLOGICAL STUDY OF ALGAE FROM GODAVARI RIVER, NASHIK

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Abstract : Algae play an important role in maintaining aquatic ecosystem and form base of food web as well as harmful to aquatic ecosystem. Godavari River shows variety of rich algal forms of various taxonomic groups in its abundant fresh water ecosystem, biodiversity studies of the algal flora found at the onset of winter season at the Godavari River reveals abundance of member of algae.

A preliminary survey of algae of the Godavari River was undertaken at different locations during the years 2016-2018. It was noted that several planktonic algae were present in the river. A large number of taxa of fresh water algae have been recorded from different localities of Godavari River *Scenedesmus*, *Ankistrodesmus*, *Oocystis*, *Actinastrum*, *Anabaenam*, *Coelastrum*, *Euastrum* and *Cosmarium* are found to be dominant genus at certain locations of the river during winter.

IndexTerms - Nashik, Rivers, Algae, systematic study.

I. INTRODUCTION

Godavari is one of the prominent river in Maharashtra. This region of water body is biologically active, having large number of flora and fauna. Several angiospermic plants and large number of algae are observed in this area, which have not been explored so far. Therefore, the study of vegetation of the water body was undertaken during years 2016-2018.

During the study, a large number of phytoplankton's like *Cosmarium*, *Closterium* and *Euastrum* were observed. The present paper describes 06 species of *Scenedesmus* (3), *Ankistrodesmus* (2), *Oocystis*, *Actinastrum*, *Anabaenam*, *Coelastrum* (1), *Euastrum* (3), *Cosmarium* (5) and its varieties, observed during present investigation. From Maharashtra area studies on algae were carried out earlier by Kamat (1973, 1974), Sarode and Kamat (1979, 1980 and 1983) and Ashtekar (1980).

The water samples from each locality were collected once in a month in the morning between 8.00 a.m. to 10.00 a.m. The collections were made for 3 consecutive years during 2016-2018, during the months of November to March. For phytoplankton analysis, water samples were collected by plankton net, as per the method adopted by Narkhede (2006). 20 liters of surface water was collected (by standing in the back water of dam at about 100-120 cm depth) by dipping a jug and filtered through the plankton net and was collected in 1 lit. Wide mouth bottle. 20 ml of water sample was preserved in 4% formalin. The morphological studies of specimens were done by using Olympus Research Microscope and Labomed Microscope (Model no. T250L250) and the photographs were taken using Kodak EasyShare cx 7330 camera. Identification of taxa was done using Fritsch (1935), Patel and George (1977), Philipose (1967), Prescott (1951), Rath and Adhikari (2005) and other relevant literature.

II SYSTEMATIC ENUMERATION

1) *Scenedesmus dimorphus* (Turpin) Kutzing

Trainor, F.R. & Burg, C.A. p 3, f 1

Colonies 4-celled with the cells arranged in a linear series. Inner cells with sharp apices. Differ from *S. obliquus* in the outer cells of the colony being more or less humped strongly curved and the apices of the cells being attenuated. Cells 9.4µ broad, 31.5µ long.

2) *S. falcatus v. maior* Chodat

Misra and Srivastava, 2003, p 87, pl 1, f 19

Colony composed of 8 fusiform cells with pointed ends, arranged in alternating series, the outer cells strongly humped, the inner cells straight; cells 8µ in diameter, 32µ long.

3) *S. armatus v. major* Prasad & Mehrotra

Misra and Srivastava, 2003, p 87, pl 1, f 21

Colonies four-celled. Cells oblong-ellipsoid and arranged in a linear series. Terminal cells with a single long spine from each pole. All cells with a median lateral longitudinal rib which is sometimes indistinct. Four celled colony 8µ broad, 18.9µ long. Differs from the type in its larger dimensions. Cells 8.1µ broad, 25.2µ long, spines 17.6µ long.

4) *Ankistrodesmus convolutus* (Corda) Ralfs

Colonies free-floating, not enclosed in mucilaginous sheath, colony of 4 cells. Cells acicular to narrowly fusiform with the ends tapering to acute apices. Chloroplast single, parietal and usually without pyrenoids, cells 5.4 µ broad, 96.4µ long.

5) *A. falcatus* (Corda) Ralfs v. *radiatus* (Chod.) Lemmermann

Philipose, 1967, p 211-212, fig 121 (d)

Colonies free-floating, not enclosed in mucilaginous sheath, colonies of 8 cells. Cells in radiating bundles, acicular to narrowly fusiform straight or curved with gradually tapering ends, 2.5 µ broad and 94 µ long.

6) *Oocystis lacustris* Chodat

Planktonic; colony of 2-8 cells surrounded by cell wall of their mother cell, but sometimes unicellular; cell body broad ellipsoidal, both ends slightly pointed and with a thick cell wall; 1-3 chloroplasts parietal plate-like, with a single pyrenoid



Problems And Prospects of Cooperative Processing Industries in India

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This paper intends to analyze the problems and prospects of cooperative processing industries in India under free markets. It is now increasingly recognized that the cooperative system in India has the capacity and potentiality to neutralize the adverse effects emerging from the process of globalization. After economic liberalization under the new economic environment, cooperatives at all level are making efforts to reorient their functions according to the market demands. The failure of the public sector in several cases is a worrisome trend. Privatization has also failed to make an impact in the rural areas. Therefore there is great hope on the cooperative sector.

The paper examines the causes of slow progress and highlights the emerging role and challenges of the cooperative processing industries.

Introduction:

Processing of food grains and other agricultural products is the most important stage in preparing them for the ultimate consumption. Almost all the agricultural commodities have to undergo one or more stages of processing before they reach the consumer. At present the work of processing is largely done by middle men owning the processing units and a good chunk of the ultimate price paid by the consumer goes to these intermediaries. This can be eliminated if the processing activities are organized on a co-operative basis by the producers themselves so that they can get better return on their produce and in some cases bring down the sales price.

Meaning and Scope:

Processing could be defined as set of techno economic activities carried out for conservation and handling of agricultural produce and to make it usable as food, feed, fibre, fuel or industrial raw material. Processing is an activity connected with the preparation of food grains and commercial crops for the purpose of making them fit for ultimate consumption. Practically every agricultural produce, after harvested and before it reaches the ultimate consumer, is subjected to certain transformation in one form or the other. Food grain processing involves changing the form of the grain. These are processed to make them more edible, more palatable and in some cases for preserving the grain. Commercial crops are processed to make them directly usable, to make them durable, look attractive and keep its original taste and characteristics, and to make it suitable for transport to long distances in foreign market where remunerative prices could be gained for them.

The small and marginal farmer cannot afford to take up this aspect of agriculture because of limited resources in terms of finance, technical skill, knowledge and limited marketable surplus. Consequently, it is being undertaken by the middle men in the private sector. For achieving maximum economy, processing units may be set up close to the source of supply. A processing unit or society can offer a number of advantages to the rural community.

1. It can help in the decentralization of industries.



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Challenges and Problems of Banking Sector in India

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Introduction::

A bank is a monetary institution that provides banking and other financial services to their customers. A bank is generally understood as an institution which provides fundamental banking services such as accepting deposits and providing loans. There are also non-banking institutions that provide certain banking services without meeting the legal definition of a bank. Banks are a subset of the financial services industry. India is one of the top 10 economies in the world, where the banking sector has tremendous potential to grow. The last decade saw customers embracing ATM, the internet, and mobile banking. India's banking sector is currently valued at Rs. 81 trillion (US\$ 1.31 trillion). It has the potential to become the fifth largest banking industry in the world by 2020 and the third largest by 2025, according to an industry report. The face of Indian banking has changed over the years. Banks are now reaching out to the masses with technology to facilitate greater ease of communication, and transactions are carried out through the internet and mobile devices.

Objectives:

1. To study the Challenges of Banking sector in India
2. To study the Major Problems of Indias Banking Sector.

Methodology:

This paper is the result of a secondary data on Indian Banking Sector with special reference to the Indian context. To complete this, information has been collected with the help of annual reports, various books, journals, magazines, and periodicals have been consulted, several reports in this particular area have been considered, and internet searching has also been done.

Challenges Of Banking sector in India:

The banking industry has been facing one challenges after another. First came the new agile FinTechs with wallets and host of other transaction services that stormed the citadel of banks. And if that was not enough, the Reserve Bank of India (RBI), came out with differentiated banking license for Payments and Small Finance Banks. The low credit offtake and asset quality deterioration has further added to their woes in the last few years.

i) Asset Quality Deterioration Continues:

The asset quality deterioration continues with the farm loan waiver in certain states is creating a moral hazard issue. The RBI, too, is forcing banks to make provisions for stressed assets, which are not strictly NPAs today.

ii) Low Credit Offtake :

The credit offtake is still low at around 70 per cent. The public sector banks (PSBs) are anyway staying away from lending, while private sector banks are selectively offering refinancing to good corporate.



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महाराष्ट्रातील शेती विकासाच्या योजनांचा अभ्यास

डॉ.मनिषा के.साहेर

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पस्ताविना:

महाराष्ट्र राज्य देशातील औद्योगिक विकासाच्याबाबतीत आघाडीवर असलेले राज्य म्हणून ओळखले जाते.परंतु असे असले तरी महाराष्ट्राची ५० टक्के लोकसंख्या शेती क्षेत्रावर अवलंबून आहे.मान राज्याच्या एकूण उत्पादनात शेतीक्षेत्राचा वाटा केवळ १०.०५ टक्के इतका आहे.राज्यात शेतीक्षेत्राचा वाटा कमी असण्याचे महत्त्वाचे कारण म्हणजे राज्यातील शेती उपयुक्त नागवडीव्यानीन शेतजमिनीचे प्रमाण,दरवर्षी पडणारा दुष्काळ,शेतमाल विक्री व्यवस्थेतील उणीवा,शेतीसाठी वित्तीय सुविधांचा अभाव, शेतकऱ्यांची मानसिकता,कमी गुंतवणूक इ.होय. अलीकडच्या काळात महाराष्ट्र सरकारने शेतीक्षेत्राचा विकास करण्यासाठी अनेक महत्त्वाची पाऊले उचलली आहे.सरकारने शेतीक्षेत्रातील दीर्घकालीन गुंतवणूक वाढवण्यावर भर दिला आहे.शेतीला गुंतवणुकीचे क्षेत्र बनवून २०२१ पर्यंत उत्पन्नात दुप्पट वाढ करण्याचा राज्य शासनाचा संकल्प आहे.त्यासाठी विविध शक्ती विषयक विकासाच्या योजना राबविल्या जात आहे.

संशोधनाची उद्दिष्टे:

शेती विकासासाठी राबविण्यात आलेल्या विविध योजनांचा आढावा घेणे.

गृहीतक: १.नवीन शेतीविषयक योजनांमुळे राज्यातील शेतीचा विकास होण्यास मदत होत आहे.

संशोधन पद्धती: प्रस्तुत शोधनिबंधासाठी माहिती संकलित करण्यासाठी दुय्यम स्रोतांचा वापर करण्यात आला आहे.त्यासाठी विविध मासिके, संदर्भ पुस्तके,शासनाचे अडबळाने,सांकेतिक स्थळे इ.चा आधार घेण्यात आला आहे.

शेतीविषयक योजना

राज्य शासनाने २०१६ हे वर्ष 'शेतकरी स्वाभिमान वर्ष' म्हणून साजरे करण्यात आले.या वर्षात अर्थसंकल्पामध्ये ३१ हजार कोटींच्या भांडवली गुंतवणुकीपैकी १९ हजार कोटीची गुंतवणूक केवळ शेतीक्षेत्रात करण्यात आली.मन २०१७ मध्ये टी गुंतवणूक २६ हजार कोटीवर गेली आहे.सिंचन,उर्जा,शेत रस्ते,कृषी प्रक्रिया उद्योग,कृषी तंत्रज्ञान, विपणन, समूहा शेती,कृषी पतपुरवठा इ.वर नद्य केंद्रित करण्यावर भर दिला जाणार आहे.त्यासाठी विविध योजना राबविण्यात आलेल्या आहेत.

१.कर्जमुक्ती योजना:

राज्यात ०१ कोटी ३७ लाख शेतकरी खातेदारांपैकी सुमारे २६ लाख शेतकरी यकीत कर्जांमुळे संस्थात्मक कर्ज व्यवस्थेबाहेर असून त्यांना पुन्हा कर्जास पात्र करण्यासाठी समिती स्थापन करण्यात आली होती.डॉ.पंजाबराव देशमुख व्याज सबलत योजनेसाठी १२५ कोटी ६४ लाख रुपयांची तरतूद करण्यात आली.तसेच पिक कर्जांचे मोठ्या प्रमाणावर पुनर्गठन करण्यात आले.पुनर्गठित शेतकऱ्यांना नव्याने कर्ज देण्याचा निर्णय घेतला गेला.पट्टिल्या पाच वर्षांचे व्याज शासनाने भरले आहे.पुढील चार वर्षांचे निम्मे व्याज शासनाद्वारे भरण्यात येणार आहे. याशिवाय पीक विम्याचे ०२ हजार कोटी,नैसर्गिक आपत्तीसाठी ०८ हजार कोटी तर कृषी समूहीसाठी ३३ हजार कोटी असे एकूण ११ हजार ५०० कोटी न्वनव्यदरित्या करण्यात आली आहे.

२.कृषी प्रक्रिया उद्योगाला चालना:

राज्य शासनाकडून कृषी प्रक्रिया उद्योगाला मोठ्या प्रमाणाने चालना देण्यात येत आहे.हेतू हे की इंधिया या कार्यक्रमात कृषी प्रक्रियाविषयक राज्यातील महत्त्वाकांक्षी तीन प्रकल्पांचे सुरुवात होत आहे.कृषी



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बँक व्यवसायातील अधुनिक प्रवाह:कॅशलेस व्यवहार

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देवळाली कॅम्प,नाशिक

प्रस्तावना:

८ नोव्हें.२०१६ रोजी ५०० व १००० रूपयांच्या नोटा चलणातुन बंद करत असल्याची म्हणजे विपुलीकरणाची घोषणा केली.नोटाबंदीच्या ऐतिहासिक निर्णयाला दोन वर्षे पूर्ण झाले.नोटा बंदीचे अनेक बरेवाईट परिणामही दिसले,मात्र नोटाबंदी हा निर्णय देशाच्या बँक व्यवस्थेत अधुनिक प्रवाहना चालना देणारा ठरला आहे. देशात रोख व्यवहार कमी करून कॅशलेस बँक व्यवहारांना प्रमाणवर चालना मिळाली आहे.

शोधनिबंधाची उद्दीष्टे:

शोधनिबंधासाठी पुढील उद्दीष्टांचा विचार करण्यात आला आहे.

- १) कॅशलेस बँक व्यवहारांवागत भारताची स्थिती अभ्यासणे.
- २) विविध कॅशलेस पर्यायांचा आढवा घेणे.
- ३) कॅशलेस अर्थव्यवस्थेचे फायदे अभ्यासणे.

शोधनिबंधाची मूहीते:

१. कॅशलेस व्यवहारांमुळे बँकांच्या वित्तीय प्रबंधपततेत वाढ झाली आहे.

संशोधन पध्दती:

प्रस्तुत शोधनिबंधासाठी दुय्यम माधनचा वापर करण्यात आला आहे त्यासाठी मासिके, संदर्भ पुस्तके, संशोधनपर लेख,विविध सांकेतिक स्थळे इत्यादींचा आधार घेण्यात आला आहे.

कॅशलेस व्यवहारांचे विविध पर्याय:

कॅशलेस व्यवहारांसाठी पुढील विविध साधने उपलब्ध आहेत.

- १) चेक किंवा धनादेश,डिमांड ड्राफ्ट
- २) डेबिट व क्रेडिट कार्डसारखे प्लस्टिक मनी.वस्तु व सेवा खरेदी,कर अथवा देयके भरणा,तिकिट खरेदी इत्यादींसाठी डेबिट व क्रेडिट कार्ड स्वाईप करणे.
- ३) इंटरनेट बँकिंग.प्रत्यक्ष बँकेत न जाता बँकिंगचे सर्व व्यवहार इंटरनेटच्या माध्यमातुन घडवसल्या संगणक अथवा मोबाईलच्या माध्यमातुन करणे.
- ४) मोबाईल बॉलेटस.पेटीएम,गुगल पे,फोन पे,पीएम अँड फ्रिचार्ज इ.

कॅशलेस व्यवहाराची साधने:

कॅशलेस व्यवहार तयार करण्यासाठी पुढील विविध साधनांचा वापर करणे शक्य आहेत.

१.एन.ई.एफ.टी. (NEFT:National Electronic Funds Transfer)

इंटरनेट बँकिंगद्वारे करण्यात येणाऱ्या या कॅशलेस व्यवहारांमध्ये बँक च्या अर्जांना दुसऱ्या बँकेवापर पैसे पाठवण्या याद्वारे शकतात.गामाटी बँकेच्या इंटरनेट बँकेसाठी नोटांतून लक्ष्यत रकमेचा पैसे पाठवण्यास वेळ लागतो मात्र,या पध्दतीमध्ये व्यवहार मुल्यावर कोणतीही रक्कम मार्गात नसते.

ATTESTED

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भारतीय स्त्रीचे बदलते सामाजिक जीवन

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एस.डी.के.टी.कॉलेज,
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प्रस्तावना :

प्राचीन भारतामध्ये स्त्रियांची सामाजिक परिस्थिती फारशी चांगली नव्हती 'चूल आणि मूल' हे तिचे कार्यक्षेत्र होते. घातपितीच्या आत तिला जीवन जगावे लागत असे. स्वैला कोणत्याही प्रकारचे स्वातंत्र्य नव्हते. शिक्षणप्रवाहापासून त्या दूर होत्या. त्यांना अनेक हक्कापासून वंचित ठेवण्यात आले होते. भारतीय समाजातील एक दुर्बल व अन्यायग्रस्त अशी परिस्थिती होती. पण २०व्या शतकाच्या सुरुवातीपासून स्त्रियांच्या परिस्थितीत व सामाजिक स्थानामध्ये बदल होत गेला.

स्त्रियांचे समाजातील स्थान आणि बदलते जीवन

जगातील कोणत्याही देशातील स्त्रियांना समाजात एक स्त्री म्हणून वेगळे स्थान आहे. लोकसंख्येच्या दृष्टीने विचार केला तर साधारणपणे ५० टक्के लोकसंख्या स्त्रियांची दिसून येते. सर्व धर्मांमध्ये स्त्रियांचा एक भिन्न दर्जा स्पष्ट करून सांगताना समाजात तिचे दुय्यम स्थान लक्षात येते. स्त्रिला समाजात पुरुषांच्या बरोबरीने समान दर्जा नव्हता. स्त्री केवळ पुरुषांसाठीच निर्माण झाली आहे असे धर्मगुरूंनी आणि पुरोहितांनी धार्मिक ग्रंथाचे वेगवेगळे आधार देऊन सांगितलेले आढळते. हिंदू धर्मात ती अर्धांगिणी आहे. ख्रिश्चन धर्मियांनी 'सुखदुःखात पुरुषांची जी इच्छा तीच तूझी इच्छा असेल, पुरुष स्त्रीवर राज्य करेल' असे मानले आहे. इस्लाममध्ये विषयक समान दर्जा मांडलेला असला तरी स्त्रीचे समाजातील स्थान गौण दिसून येते. 'समाजाचे अनेक बाजूने स्त्रीवर लादून हे स्पष्ट केले आहे. त्यामुळे स्त्रीचा समाजातील दर्जा हा पुरुषांच्या तुलनेने समान नव्हता. तिची गौण स्थिती दुय्यम होता. तिला आयुष्याच्या सर्व अवस्थांमध्ये पुरुषांचा आधार घ्यावा लागे. याचा अर्थ तिला स्वतंत्रपणे जगता येत नव्हते की तरी मुभा नव्हती.' थोडक्यात पारंपारीक विचारधारानुसार (Classical अभिजात) जगातील देशामधील स्त्री ही समाजातील स्त्री-पुरुष भेद असलेल्या समाजाची शिकार झाली होती.

भारतामध्ये विविध कालखंडामध्ये प्राचीन काळ वगळता धर्मशास्त्रकारांनी घेतलेली भूमिका स्त्रीवर अन्याय करणारीच होती असे लक्षात येते. इसवी सनाच्या आरंभापासून स्त्रीची अवस्था अधिक बिकट होत गेली. या आधीच्या वैदिक काळात तुलनात्मकदृष्ट्या स्त्रियांची स्थिती काही अंशी तरी बरी होती असे लक्षात येते. अर्थात या काळातील वैदिक समाजही पुरुष प्रधान संस्कृतीचा पुरस्कर्ता होता. हे लक्षात घ्यावे लागते.

प्राचीन काळातील स्त्रियांची स्थिती

काही अभ्यासक वैदिक काळातील स्त्रिला पुरुषांच्या बरोबरीने गौरवाचे स्थान होते असे जे आग्रहपूर्वक सांगतात ते पूर्णपणे अनेतिहासिक आहे असाही एक मतप्रवाह आढळतो. मनुस्मृतीच्या काळापासून पुढे स्त्री-जीवनातील जो कमालीचा न्हास किंवा अवनती झालेली दिसते ती पूर्वी नव्हती असे डॉ. आर. ए. ए. मंडलेचे मत मांडलेले आहे.

स्त्री-जीवना संदर्भात भिन्नकाळात विचारवंतांनी आपलीमते मांडली आहेत. स्वैला समाजात कितपत स्वातंत्र्य आहे याचे उत्तर नकारात्मक येते. 'न स्त्री स्वातंत्र्यम् अहेति', स्त्री ही समाजात पात्र नाही हे मनुस्मृतीचे वचन आजच्या काळात कुणालाही बौचणारे आहे. स्त्री ही आज पुरुषांच्या बंधनात आपले जीवन व्यतीत करीत आहे. तिच्या जीवनाचे सुकाणू सर्वरथी पुरुषांच्या हाती आहे. तिने कोणते शिक्षण घ्यायचे, घन कोणाशी करावे, व्यवसाय करावा की

ATTESTED

PRINCIPAL

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18. Medical Tourism: Opportunity and Challenges in Nashik

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Abstract

Now days Medical Tourism has emerged as the fastest growing segment in Nashik. Most of people travel to Nashik to get the opportunity of the health care services offered by the experienced healthcare professionals with the advanced medical facilities in affordable cost. In last few years Nashik has taken the lead as one of the destination for medical travel because of availability of variety of treatment options, improved infrastructure in terms of healthcare facilities with attractive locations for spending time for treatment and after treatment. The State government, Municipal Corporation, state tourism boards, travel agents, tour operators, hotel industry exploring the medical tourism industry for tremendous opportunities.

Besides Medical tourism has its own weakness and threats, hence precautionary measures are required to make the medical tourism sustainable growth tourism. This paper is an attempt to analyze opportunities and challenges of medical tourism in Nashik.

Introduction

Tourism is a traditional function of the city. Visitors come to the city on auspicious days in large numbers to have a dip in river of Godavari and Trimbakeshwar, Sapatashringi temples attract number of devotees which is suffered from infection of crowd and any other reason which ultimately become a patient of the medical tourism. Nashik district has public aided 60 hospitals, 113 dispensaries, 134 delivery centers and 103 primary health centers. In all these almost 6000 total beds were available, total doctors working almost 700 and they admitted number of patients per day, per month, per year. There are only a few hospitals that offer advanced care in health care of various diseases occurred in patients due to unavailability of advanced technology and infrastructure. Medical Tourism is the practice of travelling across international borders to obtain health care. In Nashik Medical Tourism has emerged as the fastest growing segment many people travel to Nashik to get the world class healthcare services offered by healthcare Professionals with advanced Technology and best medical facilities at affordable cost. Nashik is



ATTESTED

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18/10

4. Studies on Algae from Nandur Madhmeshwar Dam, Niphad, Nashik

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Abstract

This dam is near village Nandur Madhmeshwar dam is 42 Km. from Nashik city. Nandur Madhmeshwar Bird Sanctuary is located in Niphad Tehsil of Nashik district in Western Maharashtra. This was constructed in 1907-13 across the river Godavari just below the confluence of Kodwa and Godavari Rivers at Nandur Madhmeshwar. This resulted in the biological enriched conditions by which aquatic vegetation has been stabilized.

Nandur Madhmeshwar is nice place for migratory birds, because the area in reach food of phytoplankton and aquatic plant is available in dam.

Keyword: - Planktonic Algae Diversity, Nandur Madhmeshwar, Niphad, Nashik.

Introduction

A preliminary survey of algae of the water body was undertaken at sites of the dam during the years 2015-2016. It was noted that several planktonic algae were present in the water body. A large number of taxa of fresh water free floating algae have been recorded from sites of Nandur Madhmeshwar. *Pediastrum*, *Closterium*, are found to be dominant species at certain sites of the water body during winter.

The present investigation is the outcome of Biodiversity studies of free floating algae of area and enriches our knowledge of algal flora of this area. Therefore, the study of vegetation of the water body was undertaken during years 2015-2016.

Nandur Madhmeshwar dam-Built on the holy river- Godavari (1907-13). During the study, a large number of phytoplankton's like *Pediastrum*, *Closterium* were observed. The present paper describes 04 species of *Pediastrum*, 10 species of *Closterium*, and its varieties, observed during present investigation. The water samples were collected for 2 consecutive months in the morning between 8.00 a.m. to 10.00 a.m. The collections were made for 2 consecutive years



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LETTER ARTICLE

Convenient Synthesis of 2,4-disubstituted Chromeno[4,3-*b*]Pyridine by Microwave-Assisted, One-Pot, Three-Component ProtocolGhanshyam Jadhav¹, Vijay Medhane^{1,2,*} and Dattatray Deshmukh¹¹Chemistry Research Center, Post Graduate Department of Chemistry, KTHM College, Nashik, Affiliated to SP Pune University, Pune, Maharashtra, India; ²Department of Chemistry, SVKT College, Deolali Camp, Nashik, Affiliated to SP Pune University, Pune, Maharashtra, India

ARTICLE HISTORY

Received: March 25, 2020
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10.2174/1570178617999200630125810**Abstract:** Herein, an efficient and scalable synthesis of 2,4-diaryl substituted chromene [4,3-*b*] pyridine derivatives, using a multicomponent reaction strategy by microwave irradiation of 4-amino 2-oxo-2*H*-chromene, aromatic aldehydes, and substituted anilines is described. This synthetic strategy was found to be very useful as it follows environment benign protocol. Also it gives a good outcome in terms of yield and requires a shorter reaction time.**Keywords:** Chromene, pyridine, multicomponent reaction, microwave irradiation.

1. INTRODUCTION

Nitrogen bearing heterocycles has enormous enthusiasm for heterocyclic annulation reaction because of their dynamic presence in the several prominent pharmacological medications [1, 2]. An array of nitrogen encompassing functional groups, for example, nitro, amino, azido, and so forth, were fused for heterocyclic annulations. Specifically, the amino functionality is seen as genuinely outstanding due to easily available lone pair present on it when discriminated against others. Likewise, the development of ring structures towards annulations of different heterocycles from *ortho*-aminoaldehyde entity hushes up captivating attributable to the two unique methods for ring annulation, in particular linear and angular. This construction way predominates the direction of ring growth and usually permits the direct and regioselective introduction of functional groups and/or substituents in the newly formed heterocyclic ring. Among a few probabilities for *ortho* joined functionalities, those containing carbon and nitrogen are of particular interest, in light of the fact that the various combinations of their diverse oxidation states and simple derivatives of straightforward subsidiaries give them remarkable adaptability in heterocyclic annulations. From literature, it was noted that *o*-aminobenzaldehyde, the first and most popular individual from this class of compound, had been used for the amalgamation of different heterocycles [3-12].

Amines are the crucial scaffold for the synthesis of an enormous number of organic heterocycles, for example, nucleosides, sugars [13], nitrogen-containing heterocycles, for example, pyridines, pyrimidines, quinolines, imidazoles, quinazolines, benzodiazepines, lactams, cyclic amides and so forth [14]. An assortment of the reagents accounted for in the literature for the synthesis of chromenopyridines, most precedingly utilize ionic fluid intervened with synergist CuI/La(OTf)₃ at 100°C [15], and CuCl is catalyzed under microwave radiation [16]. A large portion of these techniques makes them inadequate according to their general appropriateness, selectivity, and business accessibility and response conditions.

For the one-pot three-component synthesis of quinolines utilizing amine, aldehyde, and alkynes, diverse synthetic protocols has been reported in the literature, to be specific CuCl in THF, AuCl₃/CuBr in CH₃OH, FeCl₃ in toluene, Fe(CF₃COO)₃, Yb(OTf)₃ catalyzed ionic fluid interceded and microwave assisted, Yb(Pfb)₃ catalyzed utilizing microwave radiation and under solvent free and using K₅CoW₁₂O₄₀•3H₂O impetus, have all been well reported [17-25].

Nowadays, the most crucial factor is to improvise the technology in order to minimize the energy consumption and use of harmful chemicals, as most of the expenses are spent on the same and hazardous chemicals which cause environmental pollution [26-28]. To overcome such difficulties, microwave technique becomes a milestone as it requires less energy and time, instead of hours the reaction completes within some minutes with improved yield as compared to the conventional heating method.

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Efficient Synthesis of Novel Thiazole Substituted Pyrrolidine Derivatives and their Antimicrobial Evaluation

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A series of new molecules containing pyrrolidine and thiazole moiety (4a-I) were designed and synthesized. The structures of the synthesized compounds were characterized by IR, ¹H NMR and mass spectral data. All the synthesized compounds were screened for their antibacterial activity against strains of bacteria as well as antifungal activity against fungal strains. Minimum inhibitory concentrations (MICs) of all the synthesized compounds were determined. The screening of title compounds revealed that most of the tested compounds showed moderate to good microbial inhibitions.

Keywords: Pyrrolidine, Thiazole, Antimicrobial activity.

INTRODUCTION

There are many types of nitrogen-containing heterocyclic compounds, which are commonly found in drug molecules and natural products. Among them, pyrrolidine is a five-membered heterocyclic compound containing nitrogen, which has the characteristics of small ring tension and high stability [1,2] and also constitutes a very important class of natural alkaloids [3]. It is imperative in pharmacologically active molecules and widely used. The pyrrolidine ring is one of the important moiety in medicinal chemistry [4], as this compound is present in the molecular structure of many drugs [5] and alkaloids [6]. The compounds containing a pyrrolidine ring exhibit various significant pharmacological activities such as antimycobacterial and antibacterial [7-10], antiarrhythmic [11], anticonvulsant [12], urinary incontinence [13], anticancer [14] and other pharmacological activities such as antidiabetic [15] and potent neuraminidase inhibitors [16].

Chiral pyrrolidines are an important unit of many natural alkaloids and pharmaceutical active molecules. Some molecules containing pyrrolidine structures have therapeutic values

such as antibiotics, dipeptidyl peptidase IV inhibitor and for treatment of ulcerative colitis and Crohn's disease [17], etc., which makes them more and more demand in the market. Therefore, the synthesis of chiral pyrrolidine compounds has attracted widespread attention from researchers.

Thiazole is one of the most-studied medicinally active moiety in recent years. Thiazoles are nitrogen and sulfur-containing heterocyclic compounds. It is present in the structure of many biologically important synthetic or natural products [18]. Hydrazones containing azomethine (-NH-N=C) constitute an important class of compounds for new drug development [19]. It is known that thiazole derivatives which exhibits antibacterial activity [20,21], antitubercular [22], anticonvulsant [23], anticancer [24,25] as well as a wide range of other pharmacological activities such as antiviral [26], antimalarial [27], antitumor [28,29] and P13 kinase inhibitor [30].

The structural diversity and biological importance of pyrrolidine and thiazoles have made them attractive targets for synthesis. Pyrrolidine and thiazole ring present in the same molecule could be convenient models for investigation of their biological activity. The literature revealed many routes for synthesis of

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Use of ICT in Teaching-Learning and its Challenges

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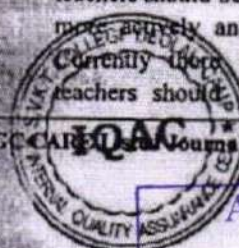
ABSTRACT

The days are gone when teaching and learning was confined to the classrooms and chalks and board methodology. As a developing country, India is striving to improve its education system for the knowledge era. ICT professional development courses are integral to improve educational practices as they empower teachers with knowledge and skills required for integrating ICT in the classroom. Such moves and actions need to be guided with research. The purpose of this study is to explore the effective use of ICT resources for taking students beyond the class rooms and for the better process of teaching and learning. It throws light on the various in the use of ICT. It has been observed that many of the teachers frequently use computers for accessing information on the Internet, communicating electronically, doing word processing and making slide presentations, but very few teachers make the proper use of ICT in real sense. As the ministry of HRD and Higher Education itself introduced many online courses for teachers as well as students and even a good weight age is given by the NAAC for the use of ICT in teaching and learning, teachers have started using ICT in their daily teaching. But while doing so many of the teachers, particularly from the rural area, find many difficulties in using it in their actual teaching. The present paper also elaborates the terms like e-learning, various teaching webs, and online courses and virtual classroom.

Key words: e-learning, online courses, webs, ICT, NAAC, HRD, virtual classroom

In recent years, ICT-related Initiatives are adopted and implemented by education systems with greater appreciation of their complexity. A major aspect of the complexity involved with ICT integration into education systems is based on the many factors involved with it including factors associated with the human side of the integration (e.g. teachers, on-going support, trainers, and headmasters) and the technological side of it (e.g. access to computers, technical support, and the e-materials). The success of the implementation of ICT is not dependent on the availability or absence of one individual

factor, but is determined through a dynamic process involving a set of interrelated factors. It is suggested that ongoing professional development must be provided for teachers to model the new pedagogies and tools for learning with the aim of enhancing the teaching-learning process (Baylor & Ritchie, 2002). To create effective learning opportunities using ICT the teachers have major role as facilitators and therefore within this framework teachers should be encouraged to linked up more actively and professionally expert. Currently there is an expectation that teachers should be 'oracle' have fairly



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**AN ESTIMATION OF RANKING PREFERENCES
REGARDING VARIOUS SOURCES OF
INFORMATION WITH SPECIAL REFERENCE TO
GRAPE EXPORTING FARMERS IN NASHIK
DISTRICT**

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2. Professor and HOD Economics, SVKT College, Deolali Camp, Nashik, India

Abstract

The study was carried out to investigate the sources of information used by Grape Exporting Farmers with special reference to Nashik district. Survey was done of Sixty (60) Grape Exporting farmers of three taluka of Nashik district. Niphad, Dindori and Nashik taluka of Nashik district were selected for collection of sample as it has highest area under grape cultivation and Twenty (20) farmers were selected randomly from each taluka as a sample and collected data by framing questionnaire. The basic purpose of this study was to find out the sources of information available for Grape Exporting farmers. Computed Preference Information Source Score (SPISS) tool was used to determine the Preferences of Information sources of grape Exporting farmers. Ranking was given to highest to lowest preferences. It was found that Draksha Bagaitdar Sangha, National Research Center for Grapes, Friends and adjoining farmers, Private Input Dealer, Internet and Social Media were major sources of information preferred by Grape Exporting Farmers. While the Local Organisations, Drakshavrutta, News Paper (Agrowan), Private Company Employee and Private Exporter were less preferred Information Sources as compare to first five rank Preference. Other information sources were least preferred by Grape exporting farmers. There is need to increase the awareness of information sources for getting updated information.

Keyword: Information Sources, Grapes, Export, Exporting Farmers, Preferences.



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Seasonal Variations in the Phytoplankton and Zooplankton

Diversity of River Godavari

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ABSTRACT

Algae and Zooplankton play an important role in maintaining aquatic ecosystem and form base of food web as well as harmful to aquatic ecosystem. Godavari River shows variety of rich zooplankton and algal forms of various taxonomic groups in its abundant fresh water ecosystem, biodiversity studies of the zooplankton & algal flora and fauna found at the onset of different season at the Godavari River.

A preliminary survey of zooplankton and algae of the Godavari River was undertaken at different locations during the years 2017-2019. It was noted that several planktonic algae and zooplankton were present in the river. A large number of taxa of fresh water zooplankton and algae have been recorded from different localities of Godavari River *Nostoc*, *Oscillatoria*, *Lyngbya*, *Microcystis*, *Aphanocapsa*, *Gloeocapsa*, *Chroococcus*, *Arthrospira* and *Spirulina* and Zooplankton like Cladocera- *Bosmina longirostris*, *B. exuvia*, *Moina spp.*, *Macrothrix sp.*, *Chydorus sp.*, *Alona rectangular*, Copepoda - *Cyclopoid naupli*, *Calanoida naupli*, *Calanoida*, & Rotifera - *Brachionous quadridentatus*, *B. species*, *B. calyciflorus*, *B. fulcatus*, and *B. forficula* are found to be dominant genus at certain locations of the river during winter.

INTRODUCTION

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Ichthyofaunal diversity of cat fishes (teleostei: Siluriformes) from Ambadi dam, ta-

Kannad, dist-Aurangabad ,Maharashtra, India

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ABSTRACT

The present study deals with Ichthyofaunal diversity of cat fishes (Teleostei: Siluriformes) from Ambadi dam, Ta-Kannad, Dist-Aurangabad . The result of present observation reveals the occurrence of 03 species belonging to 02 genera, 02 family. The family bagridae was found dominant with 02 species. Family bagridae was dominant with (02 species)67 % followed by Clariidae with (01 species)33 % constituting of the total fish species.

During the study period it was observed that Ambadi dam is situated at scattered hillocks of varying heights throughout the Marathwada region, the highest peak, Surpal Nath (960 m. above MSL) being situated near Kannad in Aurangabad district and this region is known as one of the diverse regions of freshwater cat fish diversity and notably by the geomorphology. Many of cat fish species are having commercial as well as good food value.

Key Word: Ichthyofaunal diversity, Ambadi Dam, Siluriformes.

Introduction:

"The most wonderful mystery of the life may well be the means by which it created so much diversity from so little physical matter" (Wilson, 1992).

Earth is the only planet which shows sign of life with biosphere. Biosphere is a sphere of living organism and contributes 3,50,000 species of plants, algae, fungi, mosses and higher forms of plants and 11 million species ranging from unicellular protozoa to multicellular mammals.

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Review Article

A Review on Biomimetic Synthesis of Ag₂O Nanoparticles using Plant Extract, Characterization and its Recent Applications

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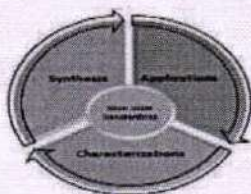
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GRAPHICAL ABSTRACT ABSTRACT



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Nanotechnology is a swiftly growing field due to its huge range of uses in various branches of science and technology. Divergent types of routes are employed for the production of nanoparticles (NPs) because of their broad applications. The conventional physical and chemical approaches have certain constraints with them either in the form of chemical contaminations during their syntheses methodology or use of higher amount of energy. During the last one or two decades research have been concentrated on creating facile, safe, non-toxic, affordable and eco-accommodating procedures for synthesis of NPs. In order to get this purpose, green synthesis approaches have been improved in order to fill this lacuna. The biogenic synthesis of NPs is facile, one pot, eco-benevolent, sustainable and a green methodology. The different biological specimens like plant tissues, yeast, bacteria, fungi, etc. are used for green synthesis for metal oxide NPs. In this review, we summed up recent literature on biomimetic synthesis of silver oxide (Ag₂O) NPs which have revolutionized method of fabrication for their stupendous applications in various sectors. Due to biocompatibility of Ag₂O NPs, it has found its efficacious applications in biomedical field. The characterization techniques and mechanism of green synthesis of Ag₂O NPs along with diverse applications have also been investigated.

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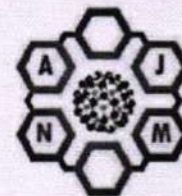


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Review Article

Plant mediated green synthesis of lanthanum oxide (La_2O_3) nanoparticles: A review

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ABSTRACT

Nanotechnology facilitates numerous magnificent applications due to the desired shapes and size of the nanoparticles (NPs). However, restricted study of synthesis and characterization of rare earth metal make them more fascinating to choose for further research. Lanthanum oxide nanoparticles (La_2O_3 NPs) is an excellent choice for research due to their fabulous applications in electronics, sensors, insulators, antimicrobial agents, biomedicines, and biocatalyst. Due to countless importance of La_2O_3 NPs, in literature its synthesis is described by several chemical, physical methods, and there are quite a few reports exploring plants as catalyst to achieve synthesis goals. In a green synthesis of La_2O_3 NPs using plants, the plant extract is used as a surfactant that encompasses the biomolecule leads the bio-reduction of lanthanum salt into the La_2O_3 NPs. This review enlightens the synthesis, characterization, and applications of the La_2O_3 NPs obtained using various plant extracts.

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14. Challenges of Cooperative Sugar Industry in Agricultural Development (With Special Reference to Nashik District)

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Dr. D. M. Gujrathi

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Abstract

The cooperative sugar factories in Nashik district have played an important role in promoting rapid development of the cooperative movement. The study examines the challenges of sugar industry in agricultural development and employment generation in rural area of Nashik district.

Keywords- Challenges of Farmer, Employment Generation, Environmental Challenges, Agriculture Development.

1) Introduction

The Sugar Industry is the second largest industry next to textile industry. Sugar industry plays eminent role in economic development of India. The industry has a great significance in relation to agricultural development and industrial economy of the rural region of India. Sugar is an agro based industry located in rural areas sugar industry has provided the most effective instrument for carrying progressive trends into the country side. In the Nashik District six sugar factories were established in various places and played eminent roles in rural development namely Darkadish Cooperative Sugar Factory, Vasantdada Patil Cooperative Sugar Factory, Kadwa Cooperative Sugar Factory, Nashik Cooperative Sugar Factory, Kakasaheb Wagh Cooperative Sugar Factory, Niphad Cooperative Sugar Factory, but now days due to various problems in sugar industry only three sugar factories were in operation.

2) Statement of the problem

The cooperative sugar factories have made significant impact on the economic conditions of the rural economy. These cooperative sugar factories transforming the traditional rural economy into a new monetary economy by developing economic aspects and political aspects of rural economy

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२५. ग्रामीण भागातील अल्पभूधारक शेतकऱ्यांच्या समस्या आणि उपाय योजना

प्रा. एस. ई. फर्बक

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सारांश (Abstract)

भारत हा कृषी प्रधान देश आहे आणि हा भारतीय अर्थव्यवस्थेचा आधार आहे. महाराष्ट्र हे भारतातील एक उच्च औद्योगिक राज्य आहे. परंतु महाराष्ट्र राज्यात शेती हा मुख्य व्यवसाय आहे. राज्यातील शेती ही पावसावर अवलंबून असून राज्यातील अनेक भागात कमी पाऊस पडला मरुटवाडा, विदर्भ अशा अनेक भागात दुष्काळ पडला आहे आणि त्यामुळे शेतकरी धोक्यात आहेत म्हणूनच ग्रामीण अल्पभूधारक शेतकऱ्यांच्या सामाजिक-अर्थशास्त्र विषयक समस्यांवर लक्ष केंद्रित करणे आणि उपाय शोधणे आवश्यक आहे. तर अल्पभूधारक शेतकऱ्यांच्या समस्या व शेतकऱ्यांनी मुचाविलेल्या उपाय शोधण्यासाठी सबर अभ्यास केला आहे. त्यासाठी पन्नास (50) शेतकऱ्यांच्या मुलाखतीद्वारे माहिती गोळा केली आहे, त्याचप्रमाणे दुय्यम माहिती पुस्तके, इंटरनेट, संशोधनपत्रे इ. पामूनचा गोळ्य केली आहे. दुष्काळ, नैसर्गिक आपत्ती, शेतीवर संपूर्ण अवलंबून, पुरक व्यवसायाचा अभाव, वाईट सवयी, आढारीपणा आणि आधुनिक जीवनशैली इ. शेतकऱ्यांच्या सामाजिक समस्या आहेत. यामध्ये जमनीचे लहान क्षेत्रफळ, साक्षरता, सिंचनाचा अभाव, हवामान, बसत, जेजेवगारी, पिढीपिढीती तफावत इ. शेतीमधील प्रमुख समस्या आहे. पॅन्शन सुविधा, प्रक्रिया उद्योग, सिंचन सुविधा, छोट्या शेतांचे एकीकरण, आधुनिक शेती, 0 टक्के कर्ज सुविधा इ. उपायांची सूचना शेतकऱ्यांनी दिली आहे की, जेणेकरून अल्पभूधारक शेतकरी सुरक्षित राहतील. त्याच वेळी बहुतेक शेतकऱ्यांना विद्याने खते इत्यादींवर सबसिडी नको आहे, पण अन्नसुरक्षेसाठी, पॅन्शन सोन.इ. शेतकरी वर्ग बरत आहे.

मुख्य संकल्पना (Key Words) : अल्पभूधारक, समस्या, पॅन्शन, सोन इ.

प्रस्तावना (Introduction)

ग्रामीण शेतकरी किंवा शेतकरी म्हणजे आपे शेतकरी की, जे ग्रामीण भागात राहतात आणि त्यांच्या अस्तीत्वासाठी कृषी आणि कृषीशी संबंधीत कार्यांवर संबंधीत कार्यांवर पूर्णपणे अवलंबून असतात परंतु ग्रामीण भागातील शेतकऱ्यांची मुख्य अडचण ही आहे की, ग्रामीण अर्थव्यवस्थेचा विकास झालेला नाही जसे की, भारतातील जवळपास 85 टक्के लोक ग्रामीण भागात राहतात. विकसनशील देशांच्या सरकारची खात्री आहे की, त्यांच्या विविध भागात पुरेसा ग्रामीण विकास झालेला नाही. प्रभावी आणि कार्यक्षम शेती पध्दतीची अंमलबजावणी करण्याकडे आता लक्ष देणे बघावे आहे. शाश्वत विकास दृष्टीने आता शेतीचा विकास होणे गरजेचे आहे. अशा रीतीने ग्रामीण भागातील शेतकऱ्यांना जास्तीत जास्त शेती उत्पन्न मिळविण्यास मदत करणारे ज्ञान आणि माहितीची देवाण घेवाण केली जावी की

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**DIFFERENT SHADES OF INDIAN WOMEN IN INDIAN ENGLISH
FICTION: A FEMALE PERSPECTIVE**

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A woman has been creating different shades of her personality depending on the roles she played vis a vis the treatment she accepted in the hands of her counterpart starting from pre independence period to the modern age of today. In order to take a glimpse of different shades of women through the ages, we have to know the story of women's own domesticity, the story of their own seclusion within the home and the possibilities and impossibilities provided by that. We further need to know, why women had to write, where women are today and how their writings have contributed to the modern age emancipation of women.

The freedom enjoyed by a woman depended upon the awareness for equality of gender and cultural growth besides many other factors in the society. There have been gender biases of varied magnitudes since ages and unfortunately, it depicted even in the work of male writers of yesteryears. There are a few male writers who bothered to depict female characters but the depiction was never authentic: because Firstly men did not have access to the insides of a house which was the only space women moved in, secondly only the wearer knows where the shoe pinches and these shoes were certainly not worn by men and thirdly howsoever sensitive these male writers may have been, they still did not consider women's lives as exciting enough to become apt material for fiction. The suffering wife, the weeping widow, or the sacrificing mother were the only images found in fiction.

Indian woman is a complex figure, a mystery too deep to understand. Throughout the centuries, she has been identified with the mythical figures of Sita, Savitri Durga, Laxmi and Saraswati. In the novels of this period, the Sita & Pativrata image of women found acceptance, and submissiveness was still considered a virtue Women either upheld





A PARALLEL BETWEEN THE INDIAN CONCEPT OF RASA THEORY AND THE WESTERN THEORIES

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Before presenting parallel study of the Indian concept of Rasa and the Western theories, it is essential know the meaning and function of Art and literature. Encyclopedia Britannica (1951) defines Art as "All great Art, being emphatically personal is accompanied by variation from existing standard of excellence. This personal variation is marked by a new intensity of feeling, by a new sense of vitality and by a new rhythm of Pattern. All great artist are pioneers possessing these characteristics..... Emotion is the key stone of painting as it is of poetry"

"By literature, A Broche means the written thought and feelings of intelligent men and women arranged in a way that gives pleasure to readers".

Thus the western function of art and literature in terms of pleasure and emotions put together may be said equivalent to the concept of Rasa in Sanskrit poetics. However the Indian tradition does not consider pleasure and emotions as separate entities. The term Rasa has been translated into English as sentiment. But there is hardly any word in English language which can convey adequately the two fold significance of Sanskrit word Rasa, its emotive and transcendental aspect. And what is worse, Sentiment in English has also a debased sense, as we can see from its adjectival form sentimental, But since the word has gained wide acceptance, it has also been used in this treatise.

Rasa is one of the oldest and most popular words in the Vedic as well as in the classical compositions of the Sanskrit language. Though in the Vedas, we do not find any clear concept of Rasa theory, the word is used as an expression of supreme pleasure. In Rig Veda, Rasa denotes the sense of water, some juice and cow's milk. In Atharva veda this word begins

