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## Some Eco-friendly Biolubricants

Sudhanshu Kharkate<sup>1</sup>, Pinky Sonarghare<sup>2</sup> Milind Shinkhede<sup>3</sup>, Sachin Chourasia<sup>4</sup>, Tikaram Kose

<sup>1,2,3</sup>Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

<sup>4</sup>Manoharbai Patel College of Arts, Commerce and Science, Deori, Gondia.

<sup>5</sup>ACS College, Tukum, Chandrapur.

[kharkate@aarf.asia](mailto:kharkate@aarf.asia)

[sonarghare@aarf.asia](mailto:sonarghare@aarf.asia)

[shinkhede@aarf.asia](mailto:shinkhede@aarf.asia)

[sachinchourasia@aarf.asia](mailto:sachinchourasia@aarf.asia)

### Abstract:

In this study efforts were made to synthesized biolubricants using crude mahua oil and karanja oil by esterification-trans-esterification and processed through trimethyopropane route to form biolubricants. Based on density, viscosity, viscosity index, pour point, flash point and acid value synthesized biolubricant better than commercial lubricant. Effect of selected biolubricants and commercial lubricants has been studied on blood of *Clarias gyriepinus* by analyzing blood samples for biochemical study. Study reveals prominent variation in titer of cholesterol and triglycerides of blood of *Clarias gyriepinus* tested with commercial lubricant than biolubricant. This shows biolubricant are less harmful to fish than commercial lubricant. The proposed compositions can be easily prepared and eco-friendly.



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**AM Nagwanshi**  
PGTD Zoology, Mahatma  
Jyotiba Fule Educational  
Campus, RTM Nagpur  
University Nagpur,  
Maharashtra, India

**SB Zade**  
PGTD Zoology, Mahatma  
Jyotiba Fule Educational  
Campus, RTM Nagpur  
University Nagpur,  
Maharashtra, India

**MM Shinkhede**  
Dada Ramchand Bakhru Sindhu  
Mahavidyalaya, Nagpur  
Maharashtra India

**SS Shahare**  
PGTD Zoology, Mahatma  
Jyotiba Fule Educational  
Campus, RTM Nagpur  
University Nagpur,  
Maharashtra, India

**Corresponding Author:**  
**AM Nagwanshi**  
PGTD Zoology, Mahatma  
Jyotiba Fule Educational  
Campus, RTM Nagpur  
University Nagpur,  
Maharashtra, India

## Studies on the toxicity of 4-nonylphenol on the histopathology of liver of African catfish *Clarias gariepinus* (Burchell, 1822)

AM Nagwanshi, SB Zade, MM Shinkhede and SS Shahare

### Abstract

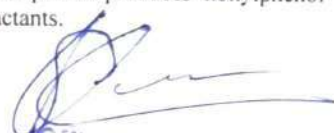
Endocrine-disrupting chemicals (EDCs) have the potential to disrupt the endocrine system by mimicking endogenous hormones such as estrogens and androgens. A variety of commercial products are found in river water, are estrogenic. 4-Nonylphenol (4-NP) has been found to be oestrogenic in fish and may influence the reproductive system of male fish. In the present study, the effects of three sublethal concentrations (70, 100 and 130 µg/lit) of 4-nonylphenol for 10 days on the liver were investigated in African catfish *Clarias gariepinus* (Burchell, 1822). Histological examination of the liver of fish treated with 70 µg/lit 4-nonylphenol for 10 days showed eccentric nuclei in cells, presence of number of vacuoles, increased accumulation of pyknotic nuclei whereas the liver of fish treated with 100 µg/lit 4-nonylphenol for 10 days showed, disorganization of hepatic cords, hepatocytes with eccentric nuclei, presence of number of vacuoles, presence of melanomacrophage. Similarly, the histological examination of the liver of fish treated with 130 µg/lit 4-NP for 10 days showed, disruption of normal architecture of central vein and hepatic triad, disorganization of hepatic cords, enucleated hepatocytes and dilation of sinusoids. Based on the above results, the present study indicates that 4-nonylphenol has marked effects on the liver histology of *C. gariepinus* which ultimately affects the normal metabolic activities of organism. The severity of effects of fish increases with the time of exposure.

**Keywords:** EDC, 4-NP, melan macrophage, hypertrophy, Kupffer cells

### Introduction

Our environment, and particularly the aquatic environment, has been under emphasis within the past decades because of the large amount of chemical substances released into it. Thousands of synthetic chemical compounds are currently registered for use in industry and agriculture, and thousands of tons of these are produced annually. Irrespective of the source or original anticipated use, substantial amount of these chemicals end up in the aquatic environment due to physicochemical, hydrologic and atmospheric processes [1]. As a result more and more of our habitats are being deteriorated day by day due to such increased environmental pollution by means of various anthropogenic activities. The industrial effluents that contain toxic substances like heavy metals, pesticides and other chemicals are discharged into the water bodies. As a result, the aquatic fauna and flora are adversely affected, which lead to bioaccumulation in aquatic organisms and bio-concentration in higher vertebrates [2]. Endocrine disrupting chemicals (EDCs) or endocrine disruptors are compounds that can interfere and alter the homeostasis of the endocrine system, by modifying its response, resulting in long-term adverse effects on human and animal health or their progeny. The effects also extend to the thyroid, nervous, immune system and metabolism in general [3]. EDCs can be divided on the basis of naturally and synthetically occurring compounds. Naturally occurring compounds include hormones that normally occurring in humans or animals and plant derived metabolites. On the contrary, the second group includes various exogenous man-made substances such as synthetic hormones and drugs, industrial chemicals (organochloride pesticides, dioxins, polychloro biphenils (PCBs), polybromo biphenils (PBBs), and alkylphenols, parabens found in cosmetics and other personal care products, manufactured industrial products such as plastic additives (bisphenol A, phthalates), antifouling paints, and chemicals used in farm animal production [4, 5]. Nonylphenol (NP) is a product of industrial synthesis formed during the alkylation process of phenols. The addition of ethoxyl groups to the parent compound produces nonylphenol ethoxylates (NPE), which are used to produce industrial surfactants.



  
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## Studies on the toxicity of 4- Nonylphenol on the biochemical parameters of African catfish *Clarias gariepinus* (Burchell, 1822)

Zade SB<sup>1\*</sup>, Shinkhede<sup>2</sup> MM, Nagwanshi<sup>1</sup> AM and Shahare<sup>1</sup> SS

<sup>1</sup>PGTD Zoology, Mahatma Jyotiba Fule Educational Campus, RTM Nagpur University Nagpur-440033, Maharashtra, India.

<sup>2</sup>Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur, Maharashtra, India

\*Corresponding author Email: [profsbzade@rediffmail.com](mailto:profsbzade@rediffmail.com)

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### ABSTRACT

Aquatic system is more vulnerable to the pollution as most of the toxicants are released into it. These toxicants cause harmful effects on the life of organism and create a toxic stress. Because of these stress, the physiology of the organism changes and as results of this all the metabolic activity alters. The biochemical markers are a good indicator of changes in the metabolic activity caused by the aquatic toxicants. These markers provide one of the most reliable means for assessing the stress caused by the toxicants. Keeping in view, the present study was undertaken to investigate the effects of 4-nonylphenol (4-NP) on the biochemical parameters of African cat fish, *Clarias gariepinus*. The results of the present study showed that there was decrease in the level of protein and cholesterol in the fishes exposed to different concentrations 4-NP for 10 days as compared to the control. Based on the results it can be concluded that the 4-NP alters the metabolic activity of African catfish, *Clarias gariepinus* (Burchell, 1822) in response to stress caused by the 4-NP.

**Keywords:** Biochemical markers, aquatic toxicants, 4-nonylphenol (4-NP), *Clarias gariepinus* (Burchell, 1822), protein and cholesterol.

### INTRODUCTION

The aquatic organisms are sensitive to environmental changes. They exhibit different degree of changes in the behavioral pattern when their habitat is polluted. The development of agricultural and industrial activities contributes to production of xenobiotics that can cause undesirable effects in aquatic systems depending on their toxicity and concentration (Havelková *et al.*, 2008). The widespread use of exogenous manmade chemicals not only brought adverse influence on agro ecosystems but also caused alteration in physiological processes of non-target organisms. These xenobiotics through surface runoff reaches to the unrestricted areas like ponds and rivers which alters the physicochemical properties of water and is toxic to aquatic organism and cause deleterious effect or even death to the aquatic animals. In many countries, large scale mortality of fishes has been recorded due to pesticides in water bodies as pollutants (Nikam *et al.*, 2011).



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## Toxic Effects of an Anticancer Drugs Doxorubicin and Cyclophosphamide on Seminal Vesicle

Z. N. Kashmiri<sup>1</sup> and V.V. Gotmare<sup>2</sup>

<sup>1</sup>Department of Zoology, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

<sup>2</sup>Department of Zoology, L.A. D. College, Nagpur

### Abstract

Anticancer drugs Doxorubicin and Cyclophosphamide are widely used to treat different types of cancer. The goal of present study is to elucidate toxic effects of Doxorubicin and Cyclophosphamide on accessory male sex gland, seminal vesicle and testosterone level. For this male Wistar rats were divided into experimental (5mg and 10mg/KgBW drugs for 10days) and control group, received drugs intraperitoneally. Treated rats revealed remarkable alteration in the histopathology of seminal vesicle and significant decrease in testosterone levels. Thus Doxorubicin and Cyclophosphamide treatment resulted into dose and duration dependent histopathological changes in the seminal vesicle as well as on testosterone concentration.

**Keywords:** Doxorubicin, Cyclophosphamide, Seminal vesicle, Testosterone.

### Introduction

The seminal vesicles (SVs) are among the most important male accessory sex glands which produce and act as reservoir for seminal fluid (Mckay and Sharma, 2018). They are located in the pelvis superior to the rectum, inferior to the fundus of the bladder and posterior to the prostate. Each seminal vesicle consists of a single, coiled, blind-ending tube giving off several irregular pouches. Histologically, the seminal vesicles are composed of 3 layers. These include an inner mucosal layer, consisting of pseudostratified columnar epithelium with goblet cells and a lamina propria; a muscular



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## Sanitation and Hygiene in Smart City

Z. N. Kashmiri

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

E-mail: kashmiri\_zenat@yahoo.com

### Abstract

*The Smart City Mission of India is aimed to provide better living conditions in a sustainable environment with smart solutions to its citizens. It is new initiative to modernize India. This mission identifies many challenges. The mitigation of these challenges depends on the monitoring and assessment of multiple factors, including demography, education, health, and the environment.*

*Deprived sanitation and hygiene are being leading cause of mortality and growing complexities in India. Smart city mission face poor sanitation and hygiene hurdle due to various reasons one of the cause is open defecation and septage. The present article bring fourth consequences of sanitation and hygiene in smart city mission.*

**Key-words:** Sanitation, Hygiene, Smart City.

### Introduction

The Smart City Mission is one of several major urban development programs focused on India's rapid growth and its challenges and opportunities. The aim is to promote economic growth, strengthen governance, and improve results for urban residents as said by Hon'ble Prime Minister Narendra Modi.

According to the United Nations, by 2050, 60% of the world's population will be living in urban areas (United Nations. World Urbanization Prospects, 2014). The important reason for the urbanization and movement of people from hinterlands to big cities are opportunities for economic and social benefits (Chen et al. 2014). The idea behind is to rejuvenate the ailing urban system, improve urban infrastructure, quality of life and achieve sustainable and inclusive development besides other things.

### Concept of Smart City

Traditionally, "Smart City" has been widely used to refer to innovative, technology dependent, sustainable, efficient, and livable cities of the future (Gil-Garcia et al. 2015). The concept of smart city vary from individual to individual. It means different thing to different people. The conceptualization of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents (http://www.smartcities.gov.in/content/ ). The meaning of smart city may vary from country to country. The picture of a smart city contains a wish list of infrastructure and services that describes his or her level of aspiration. To fulfill this aspiration one should plan the comprehensive development keeping in mind institutional, physical, social and economic infrastructure.

In the approach of the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The focus is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities (http://smartcities.gov.in/content/ ).

## BIOLOGICAL ASSESSMENT OF LAKE WITH RESPECT TO IDOLS IMMERSION

Khapekar, R. R.

Department of Botany, D.R.B. Sindhu Mahavidyalaya, Nagpur – 440 017 (M.S.)

### ABSTRACT:

On the earth's surface, relatively small portion are occupied by lakes, but their importance to human being is far greater than their area. To meet the domestic and industrial needs, lakes are the convenient and cheapest source of water. Most of the lakes are built for aesthetic purposes but their contribution to the ecosystem functioning is very significant. Many lakes are used for the immersion of holly deities' idols during festival seasons. Presented investigation was based on Planktonic study and Plamer's Pollution index (P.P.I.) calculated before and after Ganesh idols immersion in Railway Station Lake of Gondia city. The observed value of P.P.I. before immersion was 16 and after immersion 20 indicates increase in organic pollution of Railway Station Lake, after immersion of idols.

**Key Words:** Idol immersion, lake pollution, eutrophication phytoplanktons, P.P.I.

### INTRODUCTION

Aquatic ecosystem is the most diverse ecosystem in the world. The first life originated in the water and first organisms were also aquatic where water was the principal external as well as internal medium for organisms. Thus water is the most vital factor for the existence of all living organisms. Water covers about 71% of the earth of which more than 95% exists in gigantic oceans. A very less amount of water is contained in the rivers (0.00015%) and lakes (0.01%), which comprise the most valuable fresh water resources. Lakes have a more complex and fragile ecosystem as they do not have a self cleaning ability and therefore readily accumulate pollutants. The increasing anthropogenic activities in and around lake areas have contributed to a large extent to deterioration of water quality and dwindling of water bodies leading to their accelerated eutrophication. Eutrophication has very adverse effect on the flora and fauna of water bodies.

Lakes provide human being with service that includes water for irrigation, drinking, industry and dilution of pollutants, hydroelectric power, transportation, recreation, fish and esthetic enjoyment. But, more than 90% of all available liquid surface freshwater are contaminated in lakes and reservoirs [4]. Now a day's most of the aquatic bodies are becoming polluted due to rapid growth of industries and increasing anthropogenic activities. The improper treatment and disposal of inadequately treated waste water from industries have become the main cause of pollution.

For monitoring water pollution, physical and chemical parameters were used in general. During recent years, attempts towards evaluating biological methods by many scientists have been made and results are quite encouraging. The biological indicators of pollution are important to know the level and degree of the pollution. Some organisms, which are sensitive to changes in the environment, are called bio-indicators. Some phyto and zoo planktons are acts as bio indicators. Some algal forms are more valuable as biological indicators because of their acute presence. They also show quick response to environmental changes than other living organisms [6]. Biological monitoring or bio-monitoring, is the use of biological response to assess changes in the environment, generally changes due to anthropogenic causes. Bio- monitoring is a valuable assessment tool that is receiving increased use in water quality monitoring programs of all types [5]. The presence or absence of an indicator species or indicator community reflects environmental conditions. A great deal of work has been done on using algae as bio -indicators of pollution [7], [14],[ 8].

Phytoplanktons are representing the microscopic algal communities of open water as a major element (at primary level) in aquatic biota. The Phytoplankton is at the base of nutritional cycle of an aquatic ecosystem. They form a bulk of live food for zooplankton, fishes and other aquatic organisms at higher levels of food



## IMPACT OF GRAZING ON YIELD OF *CICHORIUM INTYBUS* L.

Megha Bhambri

Dept. of Botany, Dada Ramchand Bakhru Sindhu Mahavidyalaya/ RTMNU, Nagpur, Maharashtra, India.

### ABSTRACT

*Cichorium intybus* L. is of immense medicinal value. It belongs to family Asteraceae. It is best known for its use as caffeine free coffee substitute. Chicory is very palatable to animals in general and farm animals in particular. Chicory can be grown as a root crop, as a salad or vegetable crop, seed crop or as an herbage crop due to its multipurpose utility. The high palatability, high digestibility to herbivores causes a problem when it is grown especially for root or seed production. An experiment was designed to assess the need of grazing control. It was observed that the differences in the mean values among the protected and unprotected plots were significant for the root yield. Hence it can be stated that the grazing significantly reduces the crop yield of *Cichorium intybus* L.

**KEYWORDS :-** Asteraceae, Caffeine, *Cichorium intybus* L., Grazing, Palatable.

### INTRODUCTION

*Cichorium intybus* is a plant of immense medicinal importance. It belongs to family Asteraceae which is the largest plant family. The Genus name *Cichorium* is derived from the ancient Arabic word Chikourych, which was the name for a species of salad vegetable, for chicory [1]. Common names for *Cichorium intybus* L. are Chicory; succory; blue sailor; coffee weed; and witloof (Quattrocchi, 2000). Chicory, (*Cichorium intybus* L.) has originated in the Mediterranean, Central Asia and Northern Africa. Cultivation of this plant has been reported as early as the ancient Roman and Greek eras [1, 2]. Historically, chicory was grown by the ancient Egyptians as a medicinal plant, coffee substitute [3]. The first mention of chicory cultivation was in 1616, in Germany. In India chicory is found in the north- western regions like Kashmir and Punjab and in areas of South India.

Chicory is one of the most promising novel plant candidates among the carbohydrates with a potential for utilization in both food and non-food products [4, 5]. Four thousand years ago, chicory roots were used as a substitute for coffee in ancient Egypt [6, 7]. It is perhaps best known for the roasted roots used as the traditional coffee substitute with no caffeine and less well known as grazed forage for ruminants [8].

Various health benefits particularly of the roots of the plant found widespread application in traditional medicines in different parts of the world. The aqueous root extract is used against malaria in Afghanistan [9]; for the treatment of warts in Iran [10]; against liver diseases and digestion problems in Poland [11]; as laxative and diuretic in Italy and Serbia [12, 13,14]; the poultice prepared from the roots is used for pain relief in Pakistan [15]. Like Turkey, the dried root of plant is also used to prepare coffee-like beverages and as stomachic in Belgium, France and USA [12]. On the other hand, the aqueous extract from the seeds is employed against liver diseases and diarrhea in India [16], while the fresh shoots are consumed as food and utilized for the treatment of urinary infections and stomach ache [16].

Chicory is very palatable to animals in general and farm animals in particular. It is grown as a major fodder crop alongside leguminous plants in Europe and Americas. Where chicory is grown for roots, grazing adversely affects the vegetative growth (Plate 1 and 4) and root yield (Plate 2 and 5) in the same manner as diseases affects the crop yield of some important medicinal plants like aphids in *Ammi majus* L. [17]. It becomes extremely difficult to manage Chicory from grazing as all type of herbivores starting with goats, cows to squirrels and rabbits that were digging the roots out attacked the crop. An experiment was designed to assess the need of grazing control.





## Phytoremediation of soil nickel concentration as a function of growth of different plant species in the soil polluted with textile industry waste water in Yavatmal region

AP Lambat<sup>1</sup>, PA Lambat<sup>2</sup>, SA Watile<sup>3</sup>

<sup>1</sup> Assistant Professor, Sevalal Mahila Mahavidyalaya & Research Academy, Nagpur, Maharashtra, India

<sup>2</sup> Assistant Professor Dept. of Botany, DRB Sindhu Mahavidyalaya, Nagpur, Maharashtra, India

<sup>3</sup> Secretary, Jagdambha College of Engineering & Technology, Yavatmal, Maharashtra, India

### Abstract

Typical polluted soils contain large quantity of nickel. The chief area is arsenides and sulphides. Nickel is used as a component in some alloys and for metal plating for catalysts, for batteries and in certain fungicides. Many nickel salts are soluble in water. Contamination in water is due to the industrial discharge to river of effluent containing nickel compounds. The information pertaining to the soil Ni concentration recorded as function of growth of different plant species on the textile industry wastewater amended soil and which are grown under experimental conditions, control set where *Bacopa monnieri* were planted the soil Ni concentration was  $91 \pm 4.9 \text{ mg/Kg}$ , *Alternanthera sessilis* plantation the soil Ni concentration was  $92 \pm 4.1 \text{ mg/Kg}$ , *Alternanthera sessilis* grown in soil amended with microorganisms (*Azotobacter* and *Rhizobium*) it was  $74 \pm 5.2 \text{ mg/Kg}$  and *Typha angustata* the soil Ni concentration was  $85 \pm 4.8 \text{ mg/Kg}$  after 3 months of experimental period. The above predominant plants in contaminated soil shows plants shows Ni uptake more or less similar with all the combinations i.e. only farm yard manure or combination of microorganisms (*Azotobacter* and *Rhizobium*).

**Keywords:** textile effluents, nickel, *Bacopa monnieri*, *Alternanthera sessilis* and *Typha angustata*

### Introduction

There are several ways in which plants are used to clean up, or remediate, contaminated sites. To remove pollutants from soil, sediment and/or water, plants can break down or degrade organic pollutants or contain and stabilise metal contaminants by acting as filters or traps. The uptake of contaminants in plants occurs primarily through the root system, in which the principal mechanisms for preventing contaminant toxicity are found. The root system provides an enormous surface area that absorbs and accumulates the water and nutrients essential for growth, as well as other non-essential contaminants. Several reports suggest that the use of trees (rather than smaller plants) is effective in treating deeper contamination because tree roots penetrate more deeply into the ground. Plant roots also cause changes at the soil-root interface as they release inorganic and organic compounds (root exudates) in the rhizosphere. These root exudates affect the number and activity of the microorganisms, the aggregation and stability of the soil particles around the root, and the availability of the contaminants. Root exudates, by themselves can increase (mobilise) or decrease (immobilise) directly or indirectly the availability of the contaminants in the root zone (rhizosphere) of the plant through changes in soil characteristics, release of organic substances, changes in chemical composition, and/or increase in plant-assisted microbial activity. Phytoremediation is an alternative or complimentary technology that can be used along with or, in some cases in place of mechanical conventional clean-up technologies. Since, it is an *In Situ* remediation technology and also an ecofriendly, solar-energy driven clean-up technology; it was adopted for the wastewater contaminated soil treatment.

### The challenge of textile wastewater treatment

Furthermore, the dye bath wastewater generated by textile mills is often rated as the most polluting among all industrial sectors. The pollution load is characterized by high color content, suspended solids, salts, nutrients and toxic substances such as heavy metals and chlorinated organic compounds. Many textile mills in the state currently discharge their wastewater to local wastewater treatment plants with minimum treatment such as pH neutralization. This process removes much of the residual dye colour. Larger mills can discharge more than 2 million gallons of wastewater of this kind per day.

### Nickel of textile wastewater

Typical polluted soils contain large quantity of nickel. The chief area is arsenides and sulphides. Nickel is used as a component in some alloys and for metal plating for catalysts, for batteries and in certain fungicides. Many nickel salts are soluble in water. Contamination in water is due to the industrial discharge to river of effluent containing nickel compounds.

Levels are much lower and nearly 1 mg/l have been reported in surface waters. Nickel is removed by conventional water treatment and levels in treated water are generally lower than in untreated water.

### Material and Methods

#### Principle

Nickel is separated from the other ions by extraction of the nickel heptoxime complex with  $\text{CHCl}_3$ ; re-extracted into the aqueous phase with HCl and determined calorimetrically in the acidic solution with heptoxime in the presence of an oxidant. Dimethyl glyoxime may be used instead of

## Biochemical, Physiological and Mycological changes in Gram seeds due to infestation of Pulse beetle during storage

Lambat Ashish<sup>1</sup>, Gadewar Rajesh<sup>1</sup> and Lambat Prachi<sup>2</sup>

<sup>1</sup>Sevadal Mahila Mahavidyalaya and Research Academy, Nagpur (MS), India

<sup>2</sup>D R B Sindhu Mahavidyalaya, Nagpur, M.S

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### ABSTRACT

Gram is an important sources of protein. The seed infestation by pulse beetle during storage is a major problem. This paper gives a brief account of certain Physical, Physiological, Biochemical and Mycological changes in qualities of Gram seeds due to infestation of pulse beetle during storage. In the present study, it was found that the percentage of moisture content, total ash, crude fiber, and crude protein significantly increased and crude fat total carbohydrate, total sugar reducing sugar and non-reducing sugar significantly decreased in pulse beetle infested seeds of Gram during storage. Increase in protein content is attributed to insect metabolites like uric acid, which is nitrogenous in nature. The incidence percentage of fungi such as species of *Alternaria*, *Aspergillus*, *Curvularia*, *Fusarium* *Penicillium* and *Rhizopus* were predominant over all other fungi on infested gram seeds and it is increased with increase in pulse beetle infestation during storage. The physical and physiological qualities of Gram seeds i.e. 100-seed weight, germination, seedling vigour and field emergence percentage decreased with increase in infestation of pulse beetle during storage.

**Key words:** Gram, Pulse beetle, infestation, seed quality and storage.

### INTRODUCTION

Pulses are the most important source of protein in Indian diet. Storage of pulse seeds is a major problem and it is estimated that about 10% of stored pulse seeds are lost due to biological factors of which insects and rodents alone account of 5%. In severe cases the infestation was observed to be about 90%. Pulse beetles of various species belong to the family Bruchidae are important insect pest attacking variety of pulses in store. Adult female stick their eggs on the pulse seeds and the emerging grubs and bore into the seeds. The grubs remain inside the seed and appearance of a capped exit hole on the seed indicates the pupal stage. After a few days the adult emerges from the seed. About one month is required to complete one generation.

The stored grain insect's pest's infestation also encourages fungus growth by increasing the moisture content of the seeds which decreased the quality and viability of the seeds.



# BIOAUGUMENTATION TO RECLAIM SOIL FERTILITY FROM TEXTILE EFFLUENT TOXICITY IN RELATION TO CHROMIUM TOXICITY

P A Lambat<sup>1</sup>, A P Lambat<sup>2</sup> and S A Watile<sup>3</sup>

<sup>1</sup> D R B Sindhu Mahavidyalaya, Nagpur, M.S., India

<sup>2</sup> Sevadal Mahila Mahavidyalaya & Research Academy, Nagpur, M.S., India

<sup>3</sup> Jagdambha College of Engineering and Technology, Yavatmal, M.S., India

[lambatprachi@gmail.com](mailto:lambatprachi@gmail.com)

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**ABSTRACT:** The textile industry uses high volumes of water throughout its operations, from the washing of fibers to bleaching, dyeing and washing of finished products. The large volumes of wastewater generated also contain a wide variety of chemicals, used throughout processing. These can cause damage if not properly treated before being discharged into the environment. Of all the steps involved in textiles processing, wet processing creates the highest volume of wastewater. The role of organic amendments (Farm yard manure and microorganisms like *Actinomyceete*, *Azotobacter* and *Rhizobium*) in enhancing bioremediation of textile industry effluent contaminated soil was assessed. The experiment was carried out for the duration of two months. *Bacopa monnieri* (Brahmi), *Alternanthera sessilis*, *Typha angustata* (Lesser Indian Reed Mace), *Kyllinga tenuifolia* (Cyprus grass). *Bacopa monnieri* (Brahmi) showed highest Cr uptake was high in presence of farm yard manure. *Alternanthera sessilis* showed the Cr more or less similar with the combinations i.e. only farm yard manure or combination of microorganisms (*Azotobacter* and *Rhizobium*). *Typha angustata* showed highest Cr uptake was high in presence of only farm yard manure. *Kyllinga tenuifolia* showed highest Cr uptake was high in presence of microorganisms only, i.e. only farm yard manure or combination of microorganisms (*Azotobacter* and *Rhizobium*).

**KEYWORDS:** Bioremediation, Textile effluent, Farm yard manure and microorganisms

## I. INTRODUCTION:

Textiles are among the basic needs of human being. The textile industries therefore have great economic significance by virtue of its contribution to overall industrial output and employment generation. This sector has wide spectrum of industries ranging from small scale units that use traditional manufacturing process, to large integrated mills using modern machineries and equipment. There are 2324 textile industries in the country including composite and process houses.

Textile industries transform fibres into yarn; convert the yarn into fabrics or related products, and dye and finish these materials at various stages of production. In processing of textiles, the industry uses a number of dyes, chemicals, auxiliary chemicals and sizing materials. As a result, contaminated waste water is generated which can cause environmental problems unless properly treated before its disposal.

The textile industry is a significant contributor to many national economies, encompassing both small and large-scale operations worldwide. In terms of its output or production and employment, the textile industry is one of the largest industries in the world. The textile manufacturing process is characterized by the high consumption of resources like water, fuel and a variety of chemicals in a long process sequence that generates a significant amount of waste. The common practices of low process efficiency result in substantial wastage of resources and a severe damage to the environment. The main environmental problems associated with textile industry are typically those associated with water body pollution caused by the discharge of untreated effluents. Other environmental issues of equal importance are air emission, notably Volatile Organic Compounds (VOC) and excessive noise or odour as well as workspace safety.

The textile industry uses high volumes of water throughout its operations, from the washing of fibers to bleaching, dyeing and washing of finished products. The large volumes of wastewater generated also contain a wide variety of chemicals, used throughout processing. These can cause damage if not properly treated before being discharged into the environment. Of all the steps involved in textiles processing, wet processing creates the highest volume of wastewater. The aquatic toxicity of textile industry wastewater varies considerably among



Principal  
Dada Ramchond Bakhru  
Sindhu Mahavidyalaya, Nagpur-47

# BIOAUGUMENTATION TO RECLAIM SOIL FERTILITY FROM TEXTILE EFFLUENT TOXICITY IN RELATION TO CHROMIUM TOXICITY

P A Lambat<sup>1</sup>, A P Lambat<sup>2</sup> and S A Watile<sup>3</sup>

<sup>1</sup> D R B Sindhu Mahavidyalaya, Nagpur, M.S., India

<sup>2</sup> Sevadal Mahila Mahavidyalaya & Research Academy, Nagpur, M.S., India

<sup>3</sup> Jagdambha College of Engineering and Technology, Yavatmal, M.S., India

[lambatprachi@gmail.com](mailto:lambatprachi@gmail.com)

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## I. INTRODUCTION:

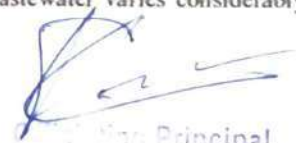
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Dada Ramchand Bakhru  
Sindhu Mahavidyalaya, Nagpur-17

## Spectrophotometric studies on the interaction of some triphenylmethane dyes with cationic surfactants

Sarkar RD

Department of Chemistry, Sindhu Mahavidyalaya Nagpur.

E-mail: [ratnasarkar1712@gmail.com](mailto:ratnasarkar1712@gmail.com)

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### ABSTRACT

Triphenylmethane dyes are commonly used in the spectrophotometric and complexometric determination of metal ions in solution. The importance of a chromogenic reagent in analytical chemistry is judged by its selectivity and sensitivity. With the development in science and technology and new materials, the importance of sensitive chromogenic reagents has increased. The addition of cationic surfactants to triphenylmethane dyes results in the increase in the sensitivity of these reagents in determination of metal ions by spectrophotometric method. The addition of cationic surfactants to these dyes results in the shifting of maximum absorbance in the alkaline medium towards the acid range by a few units. This shows that the addition of surfactants is causing changes in the dissociation constants of these dyes. The dyes under investigation are Chrome azurol S, Pyrocatechol Violet, Bromopyrogallol Red Xylenol Orange and dissociation constants have been determined at room temperature in presence of cationic surfactants resulting in the early dissociation of the groups present in these dyes. The results have been discussed in the light of different dyes and different surfactants used and because of these properties the simultaneous determination of metal ions is possible.

**Keywords:** Triphenylmethane dyes complexometric, chromogenic reagents, spectrophotometric method, cationic surfactants.

  
Officializing Principal  
Dada Ramchand Bakhru  
Sindhu Mahavidyalaya, Nagpur-17

## Effect of pH and doses of H<sub>2</sub>O<sub>2</sub> on degradation of p-nitobenzoic acid

Mandavgane Susmita A

Department of Chemistry, D. R. B. Sindhu Mahavidyalaya, Nagpur - 440017 (India).  
susmitamandavgane@gmail.com

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### ABSTRACT

The present study was used to probe the treatment of simulated wastewater containing p-nitobenzoic acid by photoperoxidation processes. Experiments were conducted in a batch photoreactor to examine the effects of operating variables like pH and ratio of H<sub>2</sub>O<sub>2</sub>/COD. A pseudo-first order kinetic model was adopted to represent the photooxidative degradation of p-nitobenzoic acid. The degradation of p-nitobenzoic acid was found to be maximum at pH 4.5 and ratio of H<sub>2</sub>O<sub>2</sub>/COD equal to 4.

**Keywords:** p-nitobenzoic acid, photoperoxidation, pseudo-first order.

### INTRODUCTION

In recent years, various studies have reported the occurrence of a large number of pharmaceuticals in surface water, but also in ground water. Surface water and ground water are widely used as water resources for drinking water. Therefore, the widespread occurrence of pharmaceuticals may have a negative impact on purity of drinking water. Complete removal or reduction of hazardous organic pollutants present in wastewater to an acceptable level prescribed by the environmental protection agencies is of prime importance in wastewater treatment. Advanced oxidation processes(AOPs) are the most promising technologies for destroying toxic organic contaminants [1-3].Consequently, AOPs are of high interest to the scientific and industrial communities involved in water treatment and have been successfully applied to the detoxification of water polluted with a wide variety of chemicals such as pesticides , phenols, hydrocarbons, surfactants, dyes and pharmaceutical wastes [4-10].

# Copolymer Resin-I : Synthesis, Characterization and Ion-Exchange Properties of Newly Formed 2,4-Dihydroxy Benzoic Acid, Biuret and Formaldehyde Resin

M. B. Thakre<sup>#1</sup>, W. B. Gurnule<sup>\*2</sup>

<sup>#1</sup>Department of Chemistry, D. B. B. Sindhur Mahavidyalaya, Nagpur-440017, India.

<sup>\*2</sup>Department of Chemistry, Kausa Baharu Bahavilgalya, Nagpur-440009, India.

mailto:mthakre@rediffmail.com

mailto:wbgurnule@rediffmail.com

**Abstract**— Terpolymer resins (2,4-DHBBF) were synthesized by the condensation of 2,4-dihydro benzoic acid, biuret and formaldehyde with varying the molar ratio of reacting monomers in the presence of acid catalyst. The composition of terpolymer resin has been determined on the basis of their elemental analysis and the conductometric titration in non aqueous medium used to determine the number average molecular weight of their resin. The viscosity measurements were carried out in dimethyl sulphoxide which indicate normal behavior. The ion-exchange properties of newly synthesized terpolymers proved to be selective for certain metals. The 2,4-DHBBF terpolymer resins were characterized with UV-visible, IR and <sup>1</sup>H-NMR spectral data, employed to elucidate the structure. Chelating ion-exchange properties of the newly synthesized terpolymer have also been studied employing batch equilibrium method. The chelating ion-exchange properties of this terpolymer was studied for Fe (III), Cu (II), Cd (II), Co (II), Zn (II), Ni (II), and Pb (II) ions. The study of this resin carried out over a wide pH range and in media of various ionic strengths. The overall rate of metal uptake by 2,4-DHBBF terpolymer resin follows the order : Fe<sup>3+</sup> > Ni<sup>2+</sup> > Co<sup>2+</sup> > Pb<sup>2+</sup> > Cd<sup>2+</sup> > Zn<sup>2+</sup> > Cu<sup>2+</sup>

**Keywords**— Resins, Terpolymer, Polycondensation, NMR, FT-IR, Degree of polymerization(DP), viscosity, Ion-exchange.

## I. INTRODUCTION

Recently many research works has been carried out on the synthesis and characterization of urea containing terpolymers. The synthesis of polymeric chain, which is propagated by the preparation of metallic chelates. Phenols and diamides introduced for synthesizing efficient method. Terpolymer is found very useful application as adhesive, fibers, coating materials, high temperature flame resistant, catalysis, semiconductors and ion exchange resins [1-5]. Ion-exchange resins have attracted much interest in the recent years due to their application in waste water treatment, metal recovery and for the identification of specific metal ions [6-7]. The polymer of poly[(2,4- dihydroxybenzophenone) butylene] has the chelating ion-exchange properties and its polychelates with transition metals are reported [8]. Copolymers involving 4-hydroxyacetophenone-biuret-formaldehyde [9] and 2,4-dihydroxy benzoic acid, ethylene diamine and formaldehyde [10] are reported for their ion -exchange characteristics. Copolymers involving 2-hydroxyethylmethacrylate and 2-methacryloyl-amidocysteine [11], polyacrylonitrile beads and 2-amino-2-thiazoline [12], 4-hydroxy acetophenone-biuret-formaldehyde [13] and o-aminophenol, urea and formaldehyde [14] are reported for their ion-exchange characteristics. However no work seems to have been carried out on synthesis and chelation ion-exchange studies of the terpolymer resins synthesized from 2,4-dihydroxybenzoic acid, biuret and formaldehyde. The purpose of present study, is to explore the adsorption behavior of eight metal ions Fe<sup>2+</sup>, Cu<sup>2+</sup>, Ni<sup>2+</sup>, Co<sup>2+</sup>, Zn<sup>2+</sup>, Cd<sup>2+</sup> and Pb<sup>2+</sup> on the newly synthesized terpolymer resins 2,4-DHBBF at different pH values, different concentrations of different electrolytes and at different shaking time intervals. The adsorption tendency of the above metal ions are based on the affinity differences towards the chelating terpolymer resins as functions of pH, electrolyte concentrations and shaking time. The terpolymer resins under investigations are found to be cation exchanger having both ion-exchange group and chelating group in the same polymer matrix and the resin can be used selectively for the purpose of purification of waste water.

## II Experimental

### 2.1 Starting Materials

Entire synthetic compounds utilized were all of AR or artificially unadulterated grade. 2,4-dihydroxy benzoic acid, biuret was purchased having 99% purity and formaldehyde (35%) procured from Merck.





# Synthesis, characterization and antibacterial activity of 1-([6-bromo-2-hydroxy-naphthalen-1-yl]arylphenyl)methyl)-3-chloro-4-(arylphenyl)-azetidin-2-one

Himani N. Chopde<sup>1</sup> | Chandrashekar P. Pandhurnekar<sup>2</sup> | Babita G. Yadao<sup>1</sup> | Doyel M. Bhattacharya<sup>1</sup> | Arvind J. Mungole<sup>3</sup>

<sup>1</sup>Department of Chemistry, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur, India

<sup>2</sup>Department of Chemistry, Shri Ramdeobaba College of Engineering and Management, Nagpur, India

<sup>3</sup>Department of Botany, Nevjabai Hitkarini College, Bramhapuri, India

## Correspondence

Himani N. Chopde, Department of Chemistry, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur, Maharashtra, India.  
Email: himanichopde@gmail.com

## Abstract

One-pot synthesis of 1-([6-bromo-2-hydroxy-naphthalen-1-yl]-aryl-phenyl)methyl)-3-chloro-4-(aryl-phenyl)azetidin-2-ones has been reported in the present research work via Staudinger [2 + 2] ketene-imine cycloaddition reaction pathway. The reaction of 1-((Benzylideneamino)(aryl)methyl)-6-bromo-naphthalen-2-ols with chloroacetic acid and triethylamine afforded 1-([6-bromo-2-hydroxynaphthalen-1-yl]aryl-phenyl)methyl)-3-chloro-4-(aryl-phenyl)azetidin-2-ones. For the structural elucidation of series of compounds, different analytical and spectroscopic techniques such as elemental analysis, IR spectra, <sup>1</sup>H-NMR spectra and mass spectra were used. All the newly synthesized compounds were tested for their anti-bacterial activity studies. It revealed that some of the compounds possesses moderate to good activities as compared to standard drugs. The widest spectrum of anti-bacterial activities against both gram-positive and gram-negative bacterial strains among the examined compounds possessed having more hydroxyl group along with  $\beta$ -lactam ring compared to other substituted azetidinones.

## 1 | INTRODUCTION

Synthesis of the heterocyclic compounds containing oxygen,<sup>1</sup> nitrogen, sulphur,<sup>2</sup> phosphorus,<sup>3</sup> selenium,<sup>4</sup> etc. had always attracted the interest of organic chemist and pharmacists over the decades mainly because of their diversities in the biological response profile, a very important biological characteristic function.<sup>5</sup> A large number of industrially synthesized human therapeutic agents, agro-chemicals and additives used by industries are heterocyclic compounds.<sup>6</sup> More than centuries, their contribution towards the development of society from a medicinal and industrial point of view and to improve the quality of human life is very well known.

One of the very important classes of heterocyclic compounds is 2-Azetidinones, a very well-known compound for the medicinal chemists.<sup>7</sup> It has been a part of the

various antibiotic derivatives.<sup>8</sup> Azetidinones are the carbonyl derivatives of azetidines which having the presences of the carbonyl group in the second position. Discovery and development of antibiotics are among the most powerful and successful achievements of modern science and technology for the control of various infectious diseases. On the other hand, the fast increase antimicrobial resistance emergence and its spreading among bacterial strains reduced the effectiveness of treatment success of a large number of drugs.<sup>9</sup> To overcome, this serious problem, the invention and discovery of novel bioactive compounds has become very essential as the antibiotic resistance by our body is the natural phenomenon.<sup>10,11</sup>

Azetidinone is also generally known as  $\beta$ -lactam. Monocyclic  $\beta$ -lactam is the very important class of heterocyclic compounds because of their different biological activities. Azetidinones which are the part of antibiotics





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## Research Article

# PRODUCTION OF CELLULASE ENZYME FROM CORN COBS, LABLAB PEEL WASTE AND GROUNDNUT SHELL WASTE BY *BACILLUS SUBTILIS* USING SOLID STATE FERMENTATION

Dr. Anita Chandak<sup>1</sup>, and Hajera Kausar Mirza Mahmood Baig<sup>2</sup>

<sup>1</sup>Department of Microbiology, D.R.B. Sindhu Mahavidyalaya, Nagpur,

<sup>2</sup>Department of Microbiology, Kamla Nehru Mahavidyalaya, Nagpur

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#### Key Words:

Cellulase, *Bacillus subtilis*, Agricultural waste, solid state fermentation

### ABSTRACT

The production of bio based products and bioenergy from less costly renewable lignocellulase material would bring benefits to the local economy environment and natural energy security. The aim of presented work is to focus on cellulose production by *Bacillus subtilis* using corn cobs, lablab peel, and groundnut shell waste as a substrate. Corn cobs is a by-product of sweet corn process industry and abundant natural biopolymer on earth and most dominating agricultural waste. Groundnut shell contains high cellulose and hemicellulose content and also other carbohydrates. *Bacillus subtilis* was used for enzyme production by using corn cob, lablab peel waste and groundnut shell waste under solid state fermentation. It first pre-treated with NaOH and it was observed that Enzyme production was improved at optimized environment i.e. 30°C to 60°C.

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### INTRODUCTION

Agro industrial and food-processing wastes available in large quantities all over the world, which largely become a source of health hazard. Agro waste can be used for the production of valuable enzyme. Cellulose is the most abundant renewable biological resource and a low-cost energy source based on energy content (S3–4/GJ) (Lynd *et al.*, 2008 ; Zhang, 2009). Cellulases are the enzymes that hydrolyze  $\beta$ -1,4 linkages in cellulose chains. The cellulases are primarily produced in nature by plants, fungi, bacteria, and even some protozoa, mollusks and nematodes (Watanabe and Tokuda, 2001). High costs of cellulases are one of the largest obstacles for commercialization of biomass biorefineries because a large amount of cellulase is consumed for biomass saccharification, for example, ~ 100 g enzymes per gallon of cellulosic ethanol produced ( Zhang *et al.*, 2006b ; Zhu *et al.*, 2009 ).

Cellulases are increasingly being used for a large variety of industrial purposes—in the textile industry, pulp and paper industry, and food industry, as well as an additive in detergents and improving digestibility of animal feeds. Now cellulases account for a significant share of the world's industrial enzyme market. However, costs of cellulase for hydrolysis of pretreated lignocellulosic materials need to be reduced, and their catalytic

efficiency should be further increased in order to make the process economically feasible (Sheehan and Himmel, 1999). A functionally based mode for hydrolysis of cellulose by fungal cellulase (Zhang Y-HP , Lynd LR 2006). Direct quantitative determination of adsorbed cellulase on lignocellulosic biomass with its application to study cellulase desorption for potential recycling. (Zhu Z, Sathitsuksanoh N, Zhang Y-HP 2009).

Cellulase are normally produced by using submerged fermentation. But SSF has gained deep interest and attention of researches due its high percentage conversion rate of biomass of energy, waste treatment and its production of secondary metabolites.

In SSF process, substrates in solid forms not only provides essential nutrients for the growth of microorganism in the culture, but it also serve as a support for the microbial cells or body. Therefore enzyme production using waste as substrates under SSF conditions have provided quit a lot of advantages. It is important to make process economically viable; this study therefore investigated on the bioconversion of corn cobs, lablab peel waste and groundnut shell waste into more useful product cellulase using *Bacillus subtilis*.

\*Corresponding author Dr. Anita Chandak

Department of Microbiology, D.R.B. Sindhu Mahavidyalaya, Nagpur.



Officiating Principal  
Dada Ramchand Bakhru  
Sindhu Mahavidyalaya, Nagpur-47

# Isolation and Identification of Pectinolytic Fungi from Soil Samples of Nagpur Region, India

Motwani D. R. and Meshram R.L.

<sup>1</sup>DRB Sindhu Mahavidyalaya, Department of Biochemistry, Panchpaoli, Nagpur-440017.

Email: daminimotwani7@gmail.com

**Abstract**—Pectin is a major component of primary cell wall of all plants and contains a range of galacturonic rich polysaccharides. Pectinolytic enzymes hydrolyse various pectin substances and share a 25% of the total global food enzymes. The present investigation deals with screening and isolation of pectinase producing fungi from soil samples collected from fruit market of Nagpur region. Total 10 pectinase producing fungal strains were isolated from soil samples. Qualitative test for screening of fungal isolates having pectinolytic activity was done by clear zone formation on plates by the growth of *Aspergillus* species showing evidence of pectin degradation. The pectinase producing fungal isolates were further identified by standard conventional methods. In further study, four most prominent pectinase producing fungal isolates were identified as *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus oryzae*, and *Aspergillus fumigatus*. In present study, an attempt was made to isolate efficient pectinase producing fungal strains from diverse regions of Nagpur.

**Keywords**—Pectin, galacturonic acid, pectinase, *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus oryzae*, and *Aspergillus fumigatus*.

## I. INTRODUCTION

Enzyme production is a growing field of biotechnology and the world market for enzyme is over 1.5 billion and it is anticipated to double by the coming years [1]. Pectin is degraded by deesterifying enzymes (pectinesterases), and depolymerising enzymes (hydrolases and lyases) and protopectinases. Pectinolytic enzymes catalyse the hydrolytic cleavage of  $\alpha$ -1,4 glycosidic bonds between galacturonic acid units by endo and exo action [2]. The pectinolytic enzymes act on pectin, a complex polysaccharide which occurs mainly in the middle lamella of higher plants [3]. Pectinases are widely used in the food industry mainly in the processing of fruits and vegetables, since they decrease the viscosity and facilitate clarification of fruit juices, wines etc. [4]. Although pectinase production is an inherent property of all microorganisms, only those microbes that produce a substantial amount of extracellular pectinases are of industrial importance and have been exploited commercially. Of these, strains of *Aspergillus* species dominate the industrial sector. Pectinases are produced by bacteria [5] and fungi [6]. Among fungi, *Aspergillus niger*, *Penicillium* and *Rhizopus* have many advantages as enzyme producers since they are recognized as GRAS (generally regarded as safe) strains and yield extracellular products which can be easily recovered from fermented medium [7]. The ability to synthesize pectinolytic enzymes is very common in groups of microorganisms but fungus is preferred on an industrial scale. This is because about ninety percent of enzymes produced may be excreted in the culture medium [8]. *Aspergillus niger* is the most commonly used fungal species for industrial production of pectinolytic enzymes [9,10].

Chief Guest

Dada Ramchand Bakhru

Sindhu Mahavidyalaya, Nagpur-17

# MOLECULAR INTERACTION STUDY IN BINARY MIXTURE OF RIBOFLAVIN WITH METHANOL AT 298 K

Sudhir P. Dange<sup>1</sup>, Omprakash P. Chimankar<sup>2</sup>

<sup>1</sup>Department of Physics, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur (Maharashtra), India

<sup>2</sup>Acoustic Research Laboratory, Department of Physics, RTM Nagpur University, Nagpur (Maharashtra), India.

## ABSTRACT:

The paper reported Ultrasonic velocity ( $u$ ), density ( $\rho$ ) and viscosity ( $\eta$ ) at 2 MHz in the binary mixtures of Riboflavin with methanol in the concentration range (0 to 0.1 M) and at temperature of 298K using ultrasonic interferometer technique. The experimental parameters, ultrasonic velocity, density and viscosity were used to calculate various acoustic and thermodynamic parameters. The obtained results support the nature and strength of molecular interaction, Physico-chemical behavior in the binary liquid mixture of Riboflavin and Methanol.

**Keywords:** Ultrasonic velocity, binary liquid mixture, molecular interaction.

## I. INTRODUCTION

In a recent year, acoustic and thermodynamic parameters have been extensively used to investigate the properties of liquids and liquid mixtures [1-2]. These studies have been found to provide information about the intermolecular processes and the structure of liquid state [3]. Ultrasonic velocity measurements are highly sensitive to molecular interactions and can be used to provide qualitative information about the physical nature and strength of molecular interaction in liquid mixtures [4-6]. The ultrasonic velocity of liquid is basically related to the bonding forces between the atoms and molecules. It helps to understand the nature of molecular interactions in pure and binary mixtures of the liquids [7-9].

In the present study, we report the value of ultrasonic velocity, viscosity and density of 0.00 to 0.1 molar concentration of Riboflavin with methanol solution at 298K. The various physical and thermodynamic parameters like adiabatic compressibility ( $\beta_s$ ), free length ( $L_f$ ), free volume ( $V_f$ ) and internal pressure ( $P_i$ ) were calculated from ultrasonic velocity, viscosity and density data. All these parameters were discussed in term of solute-solvent interaction occurring in the binary mixture of Riboflavin & methanol.

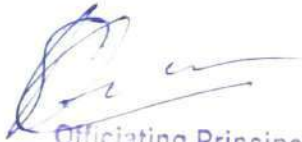
## II. EXPERIMENTAL DETAIL

The chemicals Riboflavin and methanol used in the present study were the products from E-Merck. All compounds were of AR grade with minimum assay of 99.9%. Therefore, all chemicals were used without further purification. The mixtures of these chemicals were prepared immediately before use by mixing appropriate volume. The viscosity of the liquids was measured by an Ostwald Viscometer. The Viscometer was placed in a large glass jar through which current of water was maintained with the help of a thermostat. Prior to the measurements the viscometer was calibrated with the help of distilled water. The density of the liquids was measured by the Pycnometer. The measurements were made at different concentration at 298K. An Ultrasonic interferometer having the frequency of 2 MHz (Mittal Enterprises, New Delhi, Model: F-05) with an overall accuracy of  $\pm 0.03\%$  has been used for velocity measurement. An electronically digital operated constant temperature bath (Plasto-craft Industries, Mumbai) has been used to circulate water through the double walled measuring cell made up of steel containing the experimental solution at the desired temperature. The accuracy in the temperature measurement is  $\pm 0.1$  K.

## III. RESULT AND DISCUSSION

The measured ultrasonic velocity and related thermoacoustical parameters such as adiabatic compressibility, free length, free volume and internal pressure of Riboflavin with methanol at 298K were shown in fig.1 to 5.



  
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Sindhu Mahavidyalaya, Nagpur-17

## Acoustical Studies of Molecular Interactions in Riboflavin and NaOH at 288 K.

Dange Sudhir<sup>1</sup> and Chimankar Omprakash<sup>2</sup>

<sup>1</sup>Department of Physics, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur (M.S.) - India

<sup>2</sup>Acoustic Research Laboratory, Department of Physics, RTM Nagpur University, Nagpur (M.S.)-India.

Email: [dange.sudhir30@gmail.com](mailto:dange.sudhir30@gmail.com)

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### ABSTRACT


In the present study, Ultrasonic velocity ( $u$ ), density ( $\rho$ ) and viscosity ( $\eta$ ) have been measured at 2 MHz frequency in the binary mixtures of Riboflavin with NaOH in the concentration range (0 to 0.1 M) at 288K using ultrasonic interferometer technique. The measured value of ultrasonic velocity, density and viscosity have been used to estimate the acoustical parameters namely adiabatic compressibility ( $\beta_a$ ), free length ( $L_f$ ), free volume ( $V_f$ ) and internal pressure ( $P_i$ ) with a view to investigate the nature and strength of molecular interaction in the binary mixture of Riboflavin with NaOH. The obtained result supports the occurrence of complex formation through intermolecular ionic bonding in the binary liquid mixture

**Keywords:** Ultrasonic Velocity, Adiabatic compressibility, Complex formation, ionic bonding, binary liquid Mixtures.

### INTRODUCTION

In the recent year, ultrasonic technique has been adequately employed to investigate the properties of any substance to understand the nature of molecular interaction in pure liquid[1], liquid mixtures[2-5] and ionic interactions in electrolyte solutions[6-8]. The interaction of B-complex vitamins with aqueous solution of electrolyte play a very important role in undertaking the nature of action of bioactive molecules and the thermodynamic behaviour of biochemical processes in our body system[9].



  
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Dada Ramchand Bakhru

Sindhu Mahavidyalaya, Nagpur-17



## Cosmological Application in Kaluza-Klein Theory: Generalized Sudden Singularity

Rupali Wanjari & G. S. Khadekar

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Datta Ramchandra Bakhshi  
Sinhga Barai, D. Y. C. A. Nagpur-47

## COSMOLOGICAL APPLICATION IN KALUZA-KLEIN THEORY: GENERALIZED SUDDEN SINGULARITY

RUPALI WANJARI AND G. S. KHADEKAR\*

DEPARTMENT OF MATHEMATICS,

DRB SINDHU MAHAVIDYALAYA, NAGPUR 440017, MAHARASHTRA, INDIA

E-MAIL: RWANJARI@GMAIL.COM

\*DEPARTMENT OF MATHEMATICS,

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY,

MAHATMA JYOTIBA PHULE EDUCATIONAL CAMPUS, AMRAVATI ROAD

NAGPUR 440033, MAHARASHTRA, INDIA

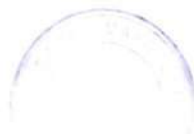
E-MAIL: GKHADEKAR@YAHOO.COM

(Received: 15 February 2019; Accepted: 25 March 2019)

**ABSTRACT.** In this paper, we considered the cosmological application by taking  $G$  and  $\Lambda$  to be a function of  $t$  in Kaluza-Klein cosmology. We use the Taylor's expansion of cosmological function  $\Lambda(t)$ , up to the first order of time  $t$  and evaluated the cosmological parameters by using the modified equation of state of the form  $p = -\rho - f(\rho)$ , where  $f(\rho) = \alpha\rho$ . The analytical properties of  $R(t)$ ,  $\rho(t)$  and  $H(t)$  are investigated and it is observed that from the solutions of the field equations, the generalized sudden singularity occurs at a finite time in the framework of Kaluza-Klein theory of gravitation.

**AMS Classification:** 54H20

**Keywords:** Kaluza-Klein Theory; Taylor's Expansion of cosmological function;  
Generalized Sudden Singularity



# IMPACT OF SOCIAL SECURITY SCHEMES ON INFORMAL LABOUR ECONOMY IN INDIA

**DR. Mukesh Kaushik**

Assistant Professor,

(Phd. M. Phil, M. Com, MA (Eco))

**Co-Author : Dr. Bhavna U. Choudhary**

Assistant Professor,

(Phd. M.Phil, B.Ed., M.Com)

**Dada Ramchand Bakhru Sindhu Mahavidyalaya, College**

## ABSTRACT:-

India's persistent high growth rate over a decade is remarkable but the majority of labour force i.e. informal labour has not much benefit from this high growth rate. As per the NSSO (2009-10), total employment in a country was 46.5 crore out of which only 2.8 crore employed in organized sector and the remaining unorganized sector. Time to time, Government has implemented various social security schemes to uplift the status of informal labour but they were not up to the mark. Since society's development can go with proper social security mechanism. Many factors such as poverty, crop failure, recession, disguised unemployment give birth to the informal sector, Social security is a mechanism of providing or making accessibility of basic amenities to the masses. This paper primarily focuses on informal labor sector, various security schemes and its impact on informal labor sector.

**KEYWORDS:** Informal labour, economy.

## INTRODUCTION:

Unorganized or Informal labour has categorized into four groups as per Ministry of Labour, Government of India, that is based on occupation, nature of employment, Special distressed categories. As per occupation, it considers Landless farmers, sharecroppers, workers in brick kilns, Oil mills, sawmills, leather workers, building and construction workers etc. Under Nature of employments, it considers Bonded labourers, migrant workers, casual and contract labourers etc. As per special distressed category, it includes manual scavengers, drivers of animal driven vehicles, loaders, and, unloaders. In service category, it considers domestic workers, barbers, newspaper vendors, midwives, vegetable and fruit vendors etc. Casual workers are those workers who don't get the

same benefits as entitled by permanent workers. (daily wage earners and some kind of contract workers consider as casual workers).

According to Economic survey (2007-08), unorganized labour is largely constituted in Agriculture sector (i.e. 52% of the total workers). A per NSSO report may 2011, during the period between 2004-05 to 2009-10 in comparison to 1999-2000 to 2004-05, clearly shows notably decrease in regular worker and increment in a casual worker. The ongoing NSSO reports clearly indicate that casual workforce in total labour force keeps on increasing. In rural areas, particular types of caste and communities are reflected in informal labour whereas such problem is not significant in the urban area but we cannot ignore such consideration as most of the



## **"A Study on Impact of E-Commerce on Small Scale Business"**

Dr. Mukesh Kaushik

Assistant Professor

Dada Ramchand Bakhru Sindhu Mahavidyalaya,

Panchpaoli, Nagpur

### **Abstract-**

E-commerce considers the buying and selling of services or products by businesses or customers, without the use of paper, and it is an economic activity that encompasses many different types of business transaction, such as banking, rental, and retail shopping and investing

As seen in the modern-day world, the World Wide Web is expanding, along with its applications presented to a group of services in the business area, such as e-commerce. Electronic commerce is a popular term in mass media and in informatics circles, and is a way of doing business via large electronic networks, namely the internet. In the recent times, the internet has shown significant growth in the Middle East, with such growth of the internet creating a new type of trade known as ecommerce, which has successful usages and adoptions. Nowadays, internet deployment has been rapid across the globe, and has become more important today because it has many services that serve the buyer and seller, meaning suppliers and customers cannot dispense away from these services. Therefore, the rapid technical changes in the marketplace have created a new business environment, which is ecommerce, which can be seen as a business carrier.

Thus, e-commerce is growing quickly owing to its widespread use of the internet and the awareness of companies in information technology, meaning the rapid proliferation of the internet has allowed small and medium-sized enterprises (SMEs) to move towards electronic-commerce; this means the availability of web-based electronic stores, allowing markets to be expanded and products to be available internationally, thus enabling competitive advantage. Moreover, when small and medium-sized companies start to implement e-commerce, they face a number of barriers that are viewed as significant obstacles amongst the management in small and medium-sized companies; thus, some changes should







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7th & 8th February-2020



**A study of Employees Perception on Core Banking Solution in Selected  
co-operative bank in Nagpur city**

**Dr. Anand G. Thadani**  
M.Com , Ph.D

**Dr. Mukesh H. Kaushik**  
M.Com , Ph.D

**Dr. Bhavana Choudhary**  
M.Com, Ph.D

**Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur**

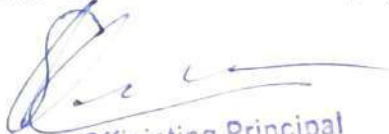
**Abstract:-**

In the present research data was collected from total 10 selected co-operative bank and 100 employees working in these co-operative bank in Nagpur city. The data obtained from the respondents was analyzed and arranged in appropriate Tables the tables were described and figures were drawn on the basis of information present in the Tables.

**Introduction**

Co-operative banks are small-sized units organized in the cooperative sector which operate both in urban and non-urban regions. These banks are conventionally centered on societies, localities and work place assemblages and they essentially lend to small borrowers and trades. The term Urban Co-operative Banks (UCBs), though not officially defined, discusses to primary cooperative banks located in urban and semi-urban areas. These banks, until 1996, could only lend for nonagricultural tenancies. As at end-March 2011, there were 1,645 UCBs operative in the country, of which mainstream were nonscheduled UCBs. Moreover, while majority of the UCBs were operating within a solitary State, there were 42 UCBs having processes in more than one State. However, today this limitation is no longer prevalent. While the co-operative banks in rural areas mainly finance agricultural founded doings counting farming, cattle, milk, hatchery, personal finance, etc. along with certain small scale industries and self-employment



  
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Dada Ramchand Bakhru  
Sindhu Mahavidyalaya, Nagpur-17

## A Study of Human Resource Management Practices of NAAC Accredited College in Nagpur District Researcher

Dr. Mahendra L. Vanjari

Assistant Professor

D.R.B. Sindhu Mahavidyalaya, Nagpur

### Abstract

The present study attempted to find out the current scenario of Human Resource development of NAAC accredited educational institutes in Nagpur District. This will enable to find out scope for improvement of HRD policies of NAAC accredited educational institutions. This will help in improving the quality of education provided by these institutions to their students. Thus, this study is significant for improvement and betterment of educational quality of educational institutions in Nagpur District of Maharashtra.

### I. Introduction

Educational institutions are essentially service providers but they are also work places for their employees. So, educational institutions cannot remain unaffected by the changes taking place world over. Education is today looked on as a business world over, including India and the competition is getting stiff. In this competitive scenario, management of human resources in universities is just as challenging as it is in any other organization. The human resource management strategies of an organization influence the way in which its employees work as well as how the organization itself works. Higher Education Institutions undergo fundamental changes due to globalization, growing competition for funding and staff as well as increasing institutional autonomy. These changes are linked to new responsibilities requiring greater managerial and leadership competences. Despite the high expenditures of higher education institutions on their staff a systematic application of strategic planning, managing and developing of human resources is only poorly established.

HRD activities strive towards activities that advance staff member's competencies so they have the skills to assume tasks aligned with the strategic direction of the university. If the strategic direction is not clear or HRD activities are not in alignment with the strategy, HRD activities become inefficient and useless, even if they are excellent. Therefore, it is crucial to understand the role of higher education and the current flow of their change to figure out what role career development should play in educational institutions.

Educational institutions are by their very nature institutions for HRD since they teach students and scientific employees, and lectures in each discipline can be related to individual skills. This strongly implies that all the contents in HEIs can be related to individual skills and HRD. Moreover, in the changing world of work, the distinction between academic and vocational/practical work becomes blurred.

**Table 1:** Information regarding participation of teaching staff in HRM management of institute in Nagpur District

Participation in HRM management	Frequency	Percent
Yes	95	63.3
No	55	36.7
<b>Total</b>	<b>150</b>	<b>100.0</b>
Chi Square Value	11.940	
Degrees of Freedom (df)	1	
Significance	0.001	

Table 1 illustrates information regarding participation of teaching staff in HRM management of institute. It is evident from the information that 63.3% teaching staff have participated in HRM management of their institute. Furthermore, 36.7% teaching staff have not participated in HRM management of their institute. The chi square statistics shows that at df 1 and significant level 0.000 the chi square value is 11.940, which means that there is significant difference in participation of teaching staff in HRM management, high percentage of teaching staff participate in HRM management of their institute in Nagpur District



## A Study of Human Resource Management Practices of NAAC Accredited College in Nagpur District Researcher

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# A study of E-commerce users Awareness of Security and Transaction Policy of E-Commerce Site in Nagpur City

**Dr. Mahendra L. Vanjari**

Assistant Professor

D.R.B. Sindhu Mahavidyalaya, Nagpur

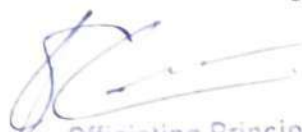
### Abstract:-

In this research paper present e-commerce users Awareness of Security and transaction policy of e-commerce site in Nagpur City. Researcher focus the Internet is publicly accessible, data can be more easily captured, which seriously undercuts the security of online trades, as well as the privacy and secrecy of the commercial exchange. The collected data was analysed by using appropriate statistical tools, which include frequency, percent and chi square test. The analysed data was arranged in tables and were described appropriately. The results were presented at the end after description of each table.

### Introduction

Online buying is a form of electronic commerce whereby user directly buy goods or services from a seller over the Internet without an intermediary service. An online shop, e-shop, e-store, Internet shop, web shop, web store, online store, or virtual store evokes the physical analogy of buying products or services at a mortar retailer or shopping centre. Online buying enabled users to shop or conduct other transactions 24 hours a day, all year round from almost any location. Users not only have a whole range of products that they can choose from and customize, but also an international selection of suppliers. They can buy around the world and conduct comparisons either directly by visiting different sites, or by visiting a single site where prices are aggregated from a number of providers and compared. It facilitated improved delivery processes which can range from the immediate delivery of digitized or electronic goods such as software or audio-visual files by downloading



  
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## **The Role of E-Governance in the Development of India**

**Dr. Satish V. Tewari**

Vice Principal

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Email: satish.tewari@gmail.com

### **ABSTRACT**


The technological advances of modern times have made great progress in the field of electronics throughout the world. As new as the concept of e-government is, so is the e-governance concept. First, governance with the help of electronic means meant only the e-government. But with the emergence and increasing use of the Internet, the concept of e-government has changed due to the combination of development of IT and so on. In modern times, the idea of running a government with the help of computers and the Internet means e-government. Large-scale governmental activities were traditionally governed and all these tasks were time consuming, cost-effective, therefore inefficient. But nowadays, the functioning of the government is done through the internet and through the internet all the different aspects of government are connected with the network. As a result, the efficiency of all the departments and the speed of communication have greatly increased and the cost has drastically reduced and as a result, the efficiency of the Government department was increased considerably. To summarize, when a government system operates efficiently through the use of electronic media, the Internet, it is called e-government. And the state in which it is run is called e-governance. The current research paper has been written to searching the information about the role of e-governance in the development of India and for giving the suggestions for improving e-governance based on information by conclusion.

**KEYWORDS:** e-government, e-governance, development

### **INTRODUCTION**

For a country to function well, proper support must exist, and where democracy is called, central and state governments need to play an important role. In a democratic state, the relation of various institutions in the state with the existing ones comes very close to the government. But just as the public has a relationship with the government, the government has a relationship with the public, and there are many reasons. If people have to do any work, they will have to go to



  
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## A Case Study on Success Story of Ola Cabs

Dr. Satish V. Tewani  
Vice Principal

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

### Abstract

Indian taxi market is estimated to be around \$ 8 billion in which 5% is under organized sector, and other is a wide open market. It is being projected that in next few years organized players will capture 15% of the market, which is growing around the rate of 45% per year. In this paper an attempt has been made to study the organizational structure of Ola cabs, business objectives and strategies, its overall working and sources of generating revenue.

**Key Words :** Ola Cabs, Business Objectives, Organizational Structure.

### Introduction

Ola Cabs was founded on 3 December 2010 as an online cab aggregator in Mumbai, and is now based in Bangalore. In November 2014, Ola diversified to incorporate auto rickshaws on a trial basis in Bangalore. After the trial phase, Ola Auto expanded to other cities like Delhi, Pune, Chennai and Hyderabad starting in December 2014. Ola's founders, Bhavish Aggarwal and Ankit Bhati, together hold only 11.95% of the company. Ola also has some individual investors including industry doyen Ratan Tata, Anupam Mittal of People Group and Rehan Yar Khan of Orios Venture Partners.

### Ola cabs provide different types of cab services

1. **Ola prime-** A business class car service for luxury travel available in few cities offering bigger cars like Toyota Inova.
2. **Ola Sedan-** A regular class car service aimed at providing the customers a spacious car for comfortable travel with cars like Toyota Etios.
3. **Ola Mini-** An economic class car service to serve customers for affordable personal transportation with cars like Tata Indica.
4. **Ola Pink-** A car service driven by a lady driver and service lady travelers.
5. **Ola Auto-** An auto service provided to the customers, removing the need for haggling the price with the drivers.

**Objectives:** To review the existing literature related to Ola cabs.

### Research Methodology

The study is based on secondary data only. The available literature was reviewed by author and a systematic drafting of the paper has been done.

### Business Objective and Strategy

Ola cabs facilitate point to point services within a city across multiple rental options and hour based car rental services or outstation travel. It makes use of a platform to ensure suitable, transparent and quick service fulfillment for the customer. Ola Cabs provides cab booking services to customers but it does not own any cabs. Every driver on the Ola cab app is an entrepreneur on itself. They bring own car on to the platform. Ola takes a commission of 15 to 20 percent on overall revenue that drivers make through the platform. Ola cabs allow customers to book on its website and even via a telephone number too. Ola App enables on touch Taxi booking with ability to track a ride and share ride detail.

### Formulate Business Analyst Delivery Plan

#### 1. Customer Segments of Ola

There are two customer segments of Ola:

>> Users of Taxi Service:

- **City Taxi** – Everyday commuters who want to book a cab to reach from one place to other, people who don't like to drive instead enjoy working while on the go.
- **Outstation or intercity Taxi** – Friends and Families who want to travel to some place together for outstation travel.



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## Analytical Study on Customer Satisfaction towards Digital Payments in E-Business

**Dr. Reema K. Kamlani**

Asst. Professor  
 Department of Commerce  
 Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

### ABSTRACT:

*As continuation of demonetization process, the cashless transaction activities are implemented impact the significant changes in the behavior of consumer. In India most of the consumers are heavily dependent only on the cash economy, now the consumers have to switch from cash to cashless electronic transactions. Most of the consumers have been using more on cash for purchase of products and service except few. Currently the government announced that all restrictions for the traditional cash transaction and offers for electronic transfer push the consumers to adopt and implement cashless transaction for their needs. This has given rise to sale of e-businesses. E-businesses are mostly depending upon online payment. In the context of the above, this study makes an attempt to analyze and find out how the cashless transaction has caused to change in the behavior of consumers and level of awareness about the cashless transaction, faith of the electronic transmission and problems faced by the consumers while using Digital payment while using e-business companies.*

**KEYWORD:** E-business, Digital Payment, Customer Satisfaction

### INTRODUCTION:

It has been said that every disruption creates opportunities and one such disruption was the announcement of demonetization by Prime Minister on 8 November 2016. Demonetization created huge growth opportunity for digital payment in India and the digital wallet companies garbed the opportunities with both the hands to expand their market share. Demonetization has presented a unique platform for adoption of digital payment, as an alternative to cash for Indian consumers.

Adoption of cashless transaction has been significantly pushed by Prime Minister as part of government reforms after demonetization of high value currency of Rs. 500 and 1000 (86% of cash circulation). The demonetization resulted in unprecedented growth in digital payment. Indian government and private sector companies such as Paytm, Freecharge and Mobikwik had been aggressively pushing several digital payment applications, including the Aadhaar Payment app, the UPI app, and the National Payments Corporation of India (NPCI) developed the Bharat



*[Signature]*  
 Relating Principal  
 Dada Ramchand Bakhru  
 Sindhu Mahavidyalaya, Nagpur-17

## AN ANALYTICAL STUDY ON ADVANTAGES AND DISADVANTAGES OF ELECTRONIC COMMERCE

Dr. Amit S. Nanwani

Assistant Professor

Department of Commerce

Dada RamchandBakhruSindhuMahavidyalaya

Panchpaoli, Nagpur.

### ABSTRACT

*Electronic Commerce or E-Commerce refers to business activities like buying and selling of products and services done on electronic systems like the Internet and all other supporting aspects of the web. E-Commerce is an innovative and latest trend in the online world. Information and Communication Technology (ICT) has been performing a vital role in the future expansion of economic sectors and the method of doing trade in an emerging economy like India. The development of Information and Communication Technology has brought many changes in entire spheres of day-to-day lifecycle of human being. This has made the life of an individual easier and smooth to a substantial level. In the present world, the E-Commerce industry has conferred its roots strongly by satisfying to almost all types of demands and needs of today's generation. E-commerce has many advantages which enhance value to the customer's satisfaction in terms of customer accessibility in any place and facilitates the company to gain extra competitive advantage over the other competitors. However, there are also certain disadvantages of E-Commerce. The study aims at an analysis of the advantages and disadvantages of e-commerce businesses.*

**KEYWORDS:** E-Commerce, advantage, disadvantages.

### INTRODUCTION

The history of E-Commerce years back to 1970, when for the first time, electronic data interchange (EDI) and electronic fund transfer were introduced. Since then, a speedy growth of E-Commerce has encompassed almost every feature of business such as Internet marketing, inventory management supply chain management and transaction processing.





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## GST: A WIND OF CHANGE IN INDIAN TAXATION SYSTEM

Dr. Amit S. Nanwani\*

### ABSTRACT

The traditionally Indian taxation system relied a lot on indirect taxes. The biggest and important source of tax revenue was indirect taxes, till tax reforms are commenced in the nineties. The major argument present for heavy dependency on indirect taxes was that the majority of the people in India were poor and so broaden base of direct taxes have inbuilt limitations. However in India the indirect taxation system is characterized by Tax cascading, Tax evasion, Complexity, Double taxation, Composite contracts, distorting tax on manufacture / production of goods and services which leads to hamper productivity and slow-paced economic growth. There were unending taxes in Indian taxation system. Some taxes were levied by the Central and rests were levied by the State. In the year 1922, India observed a standard shift in the Indian taxation system. In recent years, the government of India has attempted substantial reforms of the indirect tax calculation framework. Subsequently, to remove this diversity of taxes and to moderate the burden of the taxpayer a simple tax was required and which is how the Goods and Service Tax (GST) came into presence. The GST Bill or the Goods and Services Tax Bill, formally recognized as The Constitution (One Hundred and Twenty-Second Amendment) Bill, 2014, recommends a national Value added Tax has been executed from June 2016. Finally, the Goods and Services Tax (GST) came into effect from 1<sup>st</sup> July, 2017. Goods and Services Tax (GST) is an extension based and a single all-inclusive tax charged on goods and services consumed in an economy. This paper throws an insight into the concept of Goods and Service Tax (GST), its need, advantages, challenges and current scenario in India.

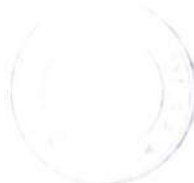
**KEYWORDS** Indirect Tax, Goods and Service Tax (GST) in India, CENVAT, CGST.

### Introduction

In India, from ancient times the practice of tax collection has been in constrain. Its references can be discovers in several ancient books like 'Arthashastra' and 'Manu Smriti'. There utilized to be a good mix of direct taxes with indirect taxes and they had been dissimilar in nature. India's history of tax collection proposes the existence of a vast and multiple tax payable population. The traditionally Indian taxation system relied a lot on indirect taxes. The biggest and important source of tax revenue was indirect taxes, till tax reforms are commenced in the nineties. The major argument present for heavy dependency on indirect taxes was that the majority of the people in India were poor and so broaden base of direct taxes have inbuilt limitations. However in India the indirect taxation system is characterized by Tax cascading, Tax evasion, Complexity, Double taxation, Composite contracts, distorting tax on manufacture / production of goods and services which leads to hamper productivity and slow-paced economic growth. There were unending taxes in Indian taxation system. Some taxes were levied by the Central and rests were levied by the State.

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\*Assistant Professor, Department of Commerce, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Panchpaoli, Nagpur, Maharashtra, India.



*[Handwritten Signature]*  
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## Traditional Commerce and E-Commerce : A Comparison

Dr. Amit S. Nanwani

Assistant Professor, Department of Commerce  
Dada Ramchand Bakhru Sindhu Mahavidyalaya, Panchpaoli, Nagpur.

### Abstract

Commerce includes all those activities which simplify the exchange of goods and services, from the producer to the ultimate consumer. The history of Traditional Commerce is millions of years back to the barter system. In the barter system the goods were exchanged with other goods in its place of money, wherever money didn't exist in those days. This is how the Traditional Commerce commenced and has been ongoing till now through the exchange of money instead of just goods. Currently, Traditional Commerce is losing its popularity due to the commencement of E-commerce in the early 20th century. The history of E-Commerce years back to 1970, when for the first time, electronic data interchange (EDI) and electronic fund transfer were introduced. E-Commerce is an innovative and latest trend in the online world. Electronic Commerce or E-Commerce refers to business activities like purchasing and selling of products and services done on electronic systems like the Internet and all other supporting aspects of the web. The development of Information and Communication Technology (ICT) has brought many changes in entire spheres of day-to-day lifecycle of human being. E-Commerce comprises numerous similarities with traditional commerce, but the main dissimilarity is the exchange of goods and services take place online in E-commerce. The study focuses on main advantages and disadvantages of the Traditional Commerce and E-Commerce. The study aims at the comparison of an analysis of the Traditional Commerce and E-Commerce businesses.

**Keywords:** Traditional Commerce, E-Commerce, comparison.

### Introduction

Commerce includes all those activities which simplify the exchange of goods and services, from the producer to the ultimate consumer. Unseen are the days when business exercises, for example the exchange of goods and services for money, between two parties, needed to happen in a traditional environment. The consumer heading off to the market, looking at an assortment of products, picking required things, getting them and afterward paying the exact sum is the thing that recognizes traditional commerce. However, presented with the initiation of technological innovations, latest techniques have risen for selling goods and services. For example, E-Commerce.

The history of Traditional Commerce is millions of years back to the barter system. In the barter system the goods were exchanged with other goods in its place of money, wherever money didn't exist in those days. This is how the Traditional Commerce commenced and has been ongoing till now through the exchange of money instead of just goods. Currently, Traditional Commerce is losing its popularity due to the commencement of E-commerce in the early 20th century. The history of E-Commerce years back to 1970, when for the first time, electronic data interchange (EDI) and electronic fund transfers were introduced. E-Commerce is an innovative and latest trend in the online world. Electronic Commerce or E-Commerce refers to business activities like purchasing and selling of products and services done on electronic systems like the Internet and all other supporting aspects of the web. The development of Information and Communication Technology (ICT) has brought many changes in entire spheres of day-to-day lifecycle of human being. E-Commerce comprises numerous similarities with traditional commerce, but the main dissimilarity is the exchange of goods and services take place online in E-commerce.

### Research Methodology

#### Objectives of the study

1. To overview the theoretical concept of Traditional Commerce.
2. To overview the theoretical concept of E-Commerce.
3. To compare Traditional Commerce and E-commerce.

#### Collection of data

The present study is based on secondary data. The secondary data has been collected from various published books, journals, articles published in magazines, daily newspaper, websites, internet, etc. The present study is qualitative in nature.



## Challenges and Opportunities in Commerce & Management Education

Dr. RICHAK. KALYANI

Assistant Professor, Dept. of Commerce  
D. R. B. Sindhu Mahavidyalaya, Panchpaoli, Nagpur

### Abstract -

*The significance of Commerce & Management Education in growth and development of economy cannot be denied. At present, Commerce and Management together acts as one of the thrust areas in quest to its revitalization and reformation for growth and development of a country.*

*The present paper is an approach paper to ponder the challenges and opportunities in Commerce & Management education. It initiates by analyzing the education system in India, growth of Commerce & Management education and its eclectic gamut. It also analyzes various academic and professional courses under Commerce and Management stream. It also makes an endeavor to analyze thrust areas through various affecting factors. It also evaluates the threats and challenges which require concern to strengthen the scope of Commerce and Management Education.*

*Worldwide transformation in business sectors has also raised expectations from service sectors predominantly in the field of finance, management, administration, auditing, banking etc. Somewhere it requires genuine efforts to link its various academic courses especially with job opportunities.*

**Keywords -** Education, challenges, employment opportunities, eclectic gamut, thrust areas.

### Introduction -

One can't deny substantial role of Commerce and Management in economic growth of our country as trade & commerce has always been acting as backbone of any developing country. Commerce is considered as a branch of Commerce which facilitates exchange of goods and services and when done at macro level, surely leads to economic development of the country. It sustains environment and infrastructure for promoting international trade as well.

Commerce is considered to be in existence since barter system and today its molded form, E-Commerce & M-Commerce, is nothing but its extension to incorporate business needs of modern society. Commerce aids to satisfy human needs, enhances standard of living, generates opportunities and thereby contributes to economic growth. This branch of business is again can be classified into trade and aids to trade. Consisting of buying and selling activities, trade serves the basic purpose of commerce and can further be divided into internal trade, external trade, wholesale trade and retail trade, while aids to trade encompasses transport, banking, insurance, advertising, warehousing and middlemen who acts as agents of trade.

Commerce is an ancient concept since existence of barter system. Greek Mythology believes Poseidon as father of Commerce. Variant of Caduceus act as symbol of commerce. The caduceus further appears as a symbol of the punch-marked coins of the Maurya Empire in India. It also acted as personal Mudra of Great King Ashoka. However, Michael Aldrich is considered as inventor of Commerce.

On the other, acting as foundation of any organization, management refers to the overall operational function of a business & commerce. It may be referred set of principles relating to the functions of planning, organizing, directing and controlling. When it comes to its evolution, one cannot forget names of Dale Carnegie, Richard Daft, Chester Barnard, Henry Fayol, Peter Drucker, F.W. Taylor, Edwin Mayo, A.H. Maslow, Frederick Drucker, Douglass McGregor and many more contributing in its growth development. Modern management owes its debt to Lillian Gilberth, mother of modern management, who pioneered industrial management techniques still we are using.

Today Commerce and Management together is one of the thrust area need revitalization and time-to-time reformation for growth and development of a country and what can be considered a better medium than to



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# "The Study of Use of Information and Communication Technology in E-Governance"

Pravin G. Kamthe

Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur

Email: [pravinikamthe@gmail.com](mailto:pravinikamthe@gmail.com)

### ABSTRACT:

In today's modern technology, online transactions have increased significantly. E-commerce is also rapidly expanding its footprint. On one hand, the government is spreading a program like "Digital India". On the other hand, online risks are also increasing. New media and technology have expanded their branches. But our country is still indifferent to information about cyber-crime and computer security. But the digital revolution has made huge strides. The digital revolution has made great strides in every part of the world, brought about development and this is no exception to the government department. Progress was also made in this department. With the advancement of information and broadcasting techniques as well as the Internet, the government is doing all its work through this electronic technology. With the modern technology of this internet, e-governance is making huge progress. E-governance is one of the most advanced tools for conducting proper governance in a developing and developed country through the Internet. Through this tool, information about the government's policy and policies is given to the companies at various levels of living in the country, as well as all government level activities are carried out through the Internet and also facilitated by the government of each country globally.

In the field of information technology, the importance of the Internet is high today. The propaganda of the Internet is constantly increasing. Today, the Internet is one of the best ways to transmit information from one place to another. The Internet is also called the super highway in computer language. Various research studies have shown that e-governance is fundamentally related to the development of computer technology, computer and communication system networking. But the question arises, is online transactions really safe? Is India Ready for e-Governance? Is information technology really playing an important role in the development of e-governance? How do information communication technologies use e-governance? In order to find out the answers to these questions, I have selected the topic of this research.

**KEYWORDS:** e-governance, Information Communication Technology, Cyber Crime,  
Electronic Data Interchange

## Foreign Direct Investment (FDI) in India: A brief critical review

Dr Anushree Mahajan

DRB Sindhu Mahavidyalaya, Nagpur

Date of Submission: 21-06-2020

Date of Acceptance: 07-07-2020

### ABSTRACT

This paper provides an in depth reason behind determinants of FDI inflows in to in addition to deserves and demerits associated with the Foreign Direct Investment (FDI) in India. The trends associated with the FDI in India has been described inside the paper It analyzes the dynamics of numerous FDI determinants in terms of the inflows and outflows. It opinions the key consequences of research regarding the determinants of FDI. The take a look at concludes that FDI inflows in to India is simultaneously determined by using the policy framework, marketplace size, monetary factors as well as financial balance and political factors.

**KEYWORDS:** Foreign Direct Investment, trend, economic growth, global, market

### I. INTRODUCTION

Foreign direct investment (FDI) is when an organization takes controlling ownership in a business entity in another nation. With FDI, foreign companies are directly associated with everyday activities in the other nation. This implies they aren't simply carrying cash with them, but additional information, aptitudes, skills and innovation. Foreign Direct Investments are generally made in open economies that have gifted workforce and development prospect. This type of investment has developed prominently because of the advent of globalization. Companies have been seen to progressively put resources into foreign entities especially the ones situated in the developing economies with the expectation of growing their customer/ client base and enlarge their market share. As such the degree of FDI net inflows have expanded impressively in the course of the most recent decade or somewhere in the vicinity. FDI is a significant fiscal hotspot for India's financial improvement. Financial advancement began in India in the wake of the 1991 emergency and from that point forward, FDI has consistently expanded in the nation. India, today has its place in top 100-club on Ease of

Doing Business (EoDB) and globally ranks number one in the greenfield FDI ranking.

### II. OBJECTIVES

- To understand the key determinants of FDI.
- To study the FDI trends in India
- To explain the advantages and disadvantages of FDI for India.

### III. RESEARCH METHODOLOGY

Methodology depicts the research course to be followed, the instruments to be utilized, universe and samples of the study for the information to be gathered, the tools of investigation utilized and methods of drawing conclusions. This research is conceptual and descriptive in nature accordingly the research study utilizes secondary data which has been gathered out of the reviews of past research papers, national journals and different reports. Government of India, Reserve Bank of India, World Investment Reports, Publications from Ministry of Commerce & from the websites of Dept. of Industrial Policy & Promotions (Govt. of India), World Bank, IMF, WTO, RBI, UNCTAD, etc. The research was done to analyse the dynamics of several FDI determinants in relation to the inflows and outflows

### IV. DETERMINANTS OF FDI

There are many determinants of FDI in the economy as suggested by existing literature available on this issue.

i) Market Size: Market size which is estimated regarding GDP is relied upon to have positive relationship with FDI. Nations having more GDP development rate can draw in more FDI inflows.

(ii) Portfolio Diversification: The expansion of portfolio is additionally viewed as another determinant. The surmised blend of bonds, protections, stock, debenture, vault receipts, and so on alludes to portfolio venture. (Gedam, 1996)

(iii) Resource Location: Area explicit determinants impact a host nation's inflow of FDI.





## LANGUAGE: MIRROR OF THE INDIAN SOCIETY

**Dr. Leena B. Chandnani**Associate Professor  
Department of English  
Dada Ramchand Bakhru  
Sindhu Mahavidyalaya, Nagpur.  
profleenabc@yahoo.com**Abstract**

The social scientists believe that the language of particular group can very well prepare the authentic record of the culture of that particular society. It is through language that the attitude, the behaviour, the psychology, the outlook, the traditions and social relations of a particular group can be revealed. Language can be used as a tool to measure the progression of any society. This paper is an attempt to study how language has helped in evolution of Indian society from time abound. Language is the mirror that reflects the culture of the society.

**Keywords:** *Linguists, Phenomenon, Subcontinent, Acclaim, Virtual.*

**Introduction**

The relationship among language, culture and society is as old as the existence of mankind. Through many centuries people and their living practices have evolved resulting in wide reaching changes in societal culture. Spoken, written and non verbal communication have preset meanings for each word written, uttered, signed or symbolized and it is referred to as language. Culture is a central binding element in society that creates values and meanings leading to both creative and creative actions by people. Language, culture and society are closely related with one another. It is the society that creates culture. At the same time it is the society that creates language and moulds it and reforms it to comfortably meet the needs

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### ICT Tools – Supporting Pillars of Education System in India

Dr. Leena B. Chandnani

Asstt. Professor,

Dada Ramchand Bakhru, Sindhu Mahavidyalaya, Nagpur,

Maharashtra, India.

[prof.leena@rediffmail.com](mailto:prof.leena@rediffmail.com) / [leena@bkhru.ac.in](mailto:leena@bkhru.ac.in)

#### Abstract

With our entering the era of globalization, education has assumed the proportion and magnitude of being a global platform playing a crucial role in bringing nations together and also playing a vital role in enhancing the global spirit. At no point of time can ever be the importance and significance of education underestimated in this age of globalization. The Internet is a driving force for much development and innovations in both developed and developing countries. Countries must be able to benefit from technological developments. To be able to do so, a cadre of professionals has to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments. Technological developments lead to changes in work and changes in the organisation of work and the required competencies are therefore changing. The introduction of ICT tools in school and colleges will certainly serve as supporting pillars of education of the country. This paper is an attempt to explore various facets of ICT tools that can be helpful to students of primary, secondary, higher secondary and college level.


**Key Words :** communication innovations vocabulary digital facilitating

#### Introduction

With the advancement of digital technology when the world has achieved the status of global village the twenty first century has already introduced and welcomed such ICT tools that may cover up the maximum of the time, space and activities in the classrooms, i.e. excellent white boards and associated software's. We cannot deny the fact that world has become a global village and to facilitate strong communication with each other not only locally but also globally we cannot ignore the use and importance of ICT tools. "An education in which the student receive instruction over the internet, from a

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## REVIEW OF RESEARCH

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## CULTURAL DISLOCATION AS REFLECTED IN AMRITA PRITAM'S PINJAR

Dr. Suman Keswani  
Assistant Professor (English),  
DRB Sindhu Mahavidyalaya, Nagpur.

## ABSTRACT

The partition of India and Pakistan resulted in large-scale mass migration on both sides of the divide. People were uprooted from their place of birth. It was a traumatic experience in history. Memories of partition continue to haunt the present generations because of the exhaustive partition literature available. Partition novels, short stories, poems, oral narratives, drama and formal history helped to review the turbulent times. The long-term consequences of partition violence, migration and cultural dislocation have been brought forth by Amrita Pritam, a women writer of repute. Her novel *Pinjar* depicts the struggles of an innocent victim of cultural dislocation. Her journey of life after being uprooted from her soil and thrown into an alien land is highlighted by Pritam in *Pinjar*.



**KEYWORDS:** Dislocation, alienation, restoration, brutality, resilience.

## INTRODUCTION :

Partition disrupted the socioeconomic fabric of the Indian subcontinent. With the sudden division of the country, people were taken unawares and ran helter-skelter for refuge. Innumerable people were rendered homeless overnight. They were forced to flee from their homeland. Hindus in Pakistan rushed towards Indian border and Indian Muslims decided to migrate to Pakistan. People were uprooted from their soil and transplanted to an alien land. Cultural dislocation occurs when an individual or a group migrates away from the

original location of upbringing and cannot culturally integrate into the new location. They have to live on someone else's terms and find hard to understand the cultural and social cues.

## REVIEW OF LITERATURE

Amrita Pritam is a woman writer per excellence. She has carved a niche for herself in the field of partition literature. The work done on Amrita Pritam stands high especially to study the effects of partition violence and cultural dislocation in her novel *Pinjar*. Rituparna Mitra has studied the trauma of partition in her dissertation "States of Affect: Trauma of partition in her

dissertation. "States of Affect: Trauma in Partition/Post Partition South Asia submitted to Michigan State University in 2015. She studied the partition process and the formation of mineralization as well as sectarian violence. She described how the above formations of the past shape the present. She analyzed violence and trauma in South Asia which would help in developing a vernacular framework to study affect mediated trauma studies. Veena Lydia Lobo has studied womanhood in her paper "Exploration of Radical Womanhood in the partition narratives of Amrita Pritam. She





**EPIDEMICS AND HUMAN VULNERABILITY: SPREAD OF  
CHOLERA IN PARTITION MIGRANTS AS REFLECTED IN RAJ  
GILL'S *THE RAPE***

**Dr. Suman P Keswani**

Assistant Professor English

DRB Sindhu Mahavidyalaya Nagpur

[suman.keswani2018@gmail.com](mailto:suman.keswani2018@gmail.com)

**Abstract**

The spread of cholera epidemic during the partition of India in 1947 has been described in various partition novels. In Raj Gill's *The Rape*, Dalipjit the protagonist suffers from a bout of cholera attack during his migration to India. This study explores the aspect of human vulnerability in the face of epidemics.

**Keywords:** *Epidemic, delirium, pandemic, vulnerability, sanitation*

**Review of literature**

Partition literature is a great reservoir to study Indian history and also the grave tragedy of partition of 1947. The topic of partition of India has been taken up for research by many researchers to study the various aspects of partition. The trauma of partition was a major theme in the fiction of novelists like Khushwant Singh (*Train to Pakistan*), Chaman Nahal (*Azadi*), Salman Rushdie (*Midnight's Children*) Amitav Ghosh (*The Shadow Lines*) and Raj Gill (*The Rape*) to name a few. The Independence movement not only proved to be a political struggle but touched all the aspects of life of the affected people across both sides of Radcliffe line. Many writers of the Indian subcontinent penned stories about the hardships of the victims. Researchers studied the various aspects of partition tragedy.

The aspect of human vulnerability to vector-borne diseases including malaria, dengue fever, cholera and the very recent Covid-19 pandemic has been taken up by many researchers. Robert Sutherst has explored the topic "Global change and Human Vulnerability to Vector-borne diseases in *the Journal of Clinical Microbiology Reviews*. He has described that climate change, change in atmospheric composition, urbanization, human population

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## सत्य और अहिंसा के पुजारी महात्मा गाँधी

डॉ. कमलकिशोर एस. गुप्ता

सहायक आचार्य

दादा रामचंद बाखरू सिंधु महाविद्यालय

नागपुर

मो. ९८८१५६७३८२

महात्मा गाँधी आधुनिक युग के राष्ट्रपिता व युगनिर्माता के रूप में स्मरण किये जाते हैं उन्होंने विदेशी दासता की बेड़ियों से भारत को स्वतंत्र कराने में अभूतपूर्व शक्ति का परिचय दिया।

महात्म गाँधी ने सत्य और अहिंसा के बल पर, भारत को अंग्रेजों की गुलामी से मुक्त कराने में, महत्वपूर्ण भूमिका निभाई। उनका व्यक्तित्व चमत्कारी था। महात्मा गाँधी ने, अंग्रेजों की, तोपों के साथ चल रही भारतीय देशभक्तों की लड़ाई की दिशा सत्याग्रह के माध्यम से अचानक बदल दी और अंततः अंग्रेजों को भारत छोड़ने पर मजबूर कर दिया।

महात्मा गाँधी शारीरिक रूप से दुबले-पतले थे। वे हाड माँस के पुतले प्रतीत होते थे। उनकी शारीरिक बनावट व चमत्कारिक पूर्ण कार्य को देखकर प्रसिद्ध वैज्ञानिक अल्बर्ट आइन्स्टीन ने कहा – “आने वाली पीढ़ियाँ शायद मुश्किल से यह विश्वास कर सकेगी कि गाँधीजी जैसा हाड-माँस का पुतला इस धरती पर हुआ है।”

अल्बर्ट आइन्स्टीन का कथन आज के आतंकवादी बर्बर और जघन्य अमानवीय कृत्यों को देखकर सचमुच बहुत कुछ सोचने पर विवश कर देता है। गाँधीजी मात्र हाड-माँस के व्यक्ति नहीं थे बल्कि वे संपूर्ण एक विचारात्मक आंदोलन थे, सामाजिक दर्शन थे और युग पुरुष थे। महात्मा बुद्ध व कबीर के बाद शांति के वे एक ऐसे मसीहा थे जिन्होंने सत्य व अहिंसा के व्यापक महत्व को समझा और अपने में आत्मसात कर अमल में लाया तथा लोगों को एक नई राह दिखाई। गाँधी के दर्शन में सत्य और अहिंसा का विशेष महत्व है।

(श्रोताओं) सबसे पहले मैं सत्य के संबंध में चर्चा करूँगा।

सत्य की अवधारणा :- गाँधीजी एक व्यापक सर्वशक्तिमान देवी सता में विश्वास करते थे। उसी को वह ईश्वर कहते थे उसी को वह सत्य मानते थे। उसी को वह प्रेम का स्वरूप समझते थे। उन्होंने कहा कि मैं समझता हूँ ईश्वर जीवन है। सत्य है, प्रकाश है और प्रेम है। सत्य गाँधीजी के दर्शन और चिंतन का मुख्य आधार रहा है। मन, वचन और आचरण तीनों में सत्य को व्यावहारिकता के साथ प्रयोग किया जाना चाहिए। गाँधीजी ने सत्य के दो रूप बताये पहला निरपेक्ष सत्य एवं सापेक्ष सत्य।

सत्य क्या है? सत्य किसे कहेंगे? उसका स्वरूप क्या है? ऐसे अनेक प्रश्न सत्य के संबंध में मानव मन में निर्माण होते हैं। सत्य के संबंध में अपने विचार स्पष्ट करते हुए गाँधीजी कहते हैं – “यह एक बड़ा कठिन प्रश्न है, पर स्वयं अपने लिए मैंने इसे हल कर लिया। तुम्हारी अंतरात्मा जो कहती है वह सत्य है। उसी प्रकार शुद्ध आत्मा के निर्माण के लिए सत्य, अहिंसा, ब्रम्हाचर्य अस्तेय और अपरिग्रह के साधनों की जरूरत होती है। गाँधी के विचारानुसार – “सत्य वह है जिसे आप इस क्षण सत्य होना मानते हैं और वही आपका ईश्वर है। सत्य शब्द की उत्पत्ति सत् से हुई जिसका अर्थ है सत्य से भिन्न किसी का भी अस्तित्व नहीं है। जहाँ सत्य है वही ज्ञान है जो स्वयं सत्य है जहाँ सत्य नहीं वहाँ सच्चा ज्ञान भी नहीं हो सकता और जहाँ सच्चा ज्ञान होता है वही सदैव आनंद होता है।”

इस प्रकार गाँधीजी ने सत्य को व्यापक अर्थ में परिभाषित करते हुए न केवल व्यक्ति के लिए इसे महत्वपूर्ण माना बल्कि राजनीतिक, सामाजिक और आर्थिक क्षेत्र में भी इसे लागू करने का प्रयत्न किया।

महात्मा गाँधी सत्य के संबंध में कहते हैं – “सत्य मेरे लिए सर्वोपरी सिद्धांत है। मैं सत्य के रूप में परमात्मा की पूजा करता हूँ। सत्य की खोज में अपनी प्रिय वस्तु की, बलि चढ़ा सकता हूँ।” आगे वे कहते

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बिजनौर 246701 (उ.प्र.)

फोन : 01342-263232, 07838090732

ई-मेल : shodhdisha@gmail.com

वेब साइट : www.hindisahityaniketan.com

संपादक

डॉ. गिरिराजशरण अग्रवाल

प्रबंध संपादक

डॉ. मोना अग्रवाल

संयुक्त संपादक

डॉ. शंकर क्षेम

क्षेत्रीय कार्यालय

हरियाणा

डॉ. मोना अग्रवाल

बॉ-203, पार्क व्यू सिटी-2 सोहना रोड,

गुडगाँव (हरियाणा)

फोन : 0124-4076565, 07838090237

उपसंपादक

डॉ. रश्मि त्रिवेदी

कला संपादक

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उपसंपादक

डॉ. अशोककुमार 09557746346

दिल्ली एन.सी.आर.

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अनिलकुमार जैन, एडवोकेट

आर्थिक परामर्शदाता

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 Dada Ramchand Bakshru  
 Sindhu Mahavidyalaya, Nagpur-17

## समकालीन कविताओं में प्रकृति व पर्यावरण-चेतना के स्वर

डॉ० सपना तिवारी  
सहायक प्राध्यापक  
डी०आर०बी० सिंधु महाविद्यालय, नागपुर

युगधर्म की मानसिकता के अनुसार कविता में परिवर्तन होता है। प्रयोगों के इस आधुनिक दौर में कविता का ढाँचा और प्रतीकात्मक स्वरूप बदला है। समकालीन कविताएँ प्रकृति के कृत्रिम, आभिजात्य और छद्म से पूरे सहबोध से अनुप्राणित हैं। क्योंकि समकालीन कवि अपने काव्य को समृद्ध करने हेतु प्रकृति को माध्यम नहीं बनाते, बल्कि प्रकृति को वे संपूर्ण एवं अखंड सत्ता के रूप में देखते हैं। समकालीन कवियों में यह दृष्टि उन्हें किसानी और घुमक्कड़ जीवन के संयोग से प्राप्त हुई है। समकालीन कविताएँ यह दर्शाती हैं कि कवि-प्रज्ञा को जाग्रत करने का सबसे उत्तम माध्यम प्रकृति है। प्रकृति जैसी उत्तेजना प्रदान करनेवाला अन्य कोई साधन नहीं है।

बाबा नागार्जुन, शमशेरबहादुर सिंह, अज्ञेय, केदारनाथ अग्रवाल, त्रिलोचन, मुक्तिबोध, रघुवीर सहाय, राजकमल चौधरी जैसे महान कवियों ने प्रकृति, समाज, संस्कृतिबोध को अपनी कविताओं में विशेष स्थान देते हुए, उत्पीड़न की पूरी प्रक्रिया से संघर्षरत समाज को जोड़ा है।

समकालीन कविता में प्रकृति के रूप ही नहीं, अपितु प्रकृति के सुंदर रूप को बचाए रखने की चिंता भी है अर्थात् प्रकृति-संरक्षण की चिंता। वर्तमान समय में पर्यावरण संकट बढ़ी चुनौती के रूप में मौजूद है। समकालीन कविताएँ इस उद्देश्य को उद्घाटित करती हैं कि प्रकृति यदि संरक्षित होगी तो हमारा जीवन भी सुरक्षित होगा।

विश्व ही ज्वलंत समस्याओं में मानव और उसके भविष्य से जुड़ी समस्याओं में एक बड़ा संकट उत्पन्न करनेवाली बात है, पर्यावरण-प्रदूषण। कितने प्रयासों के बावजूद प्राकृतिक वातावरण शुद्ध नहीं हो पा रहा है। इन प्रयासों में समकालीन कविता पीछे नहीं है। रामदरश मिश्र, अरुण कमल, ज्ञानेंद्रप्रति, उदयप्रकाश आदि ने इस विषय पर पूरी शिद्दत के साथ लिखा है। समकालीन कविता वैश्विक समस्याओं से रूबरू होती है।

समकालीन कविता में प्रकृति की सत्ता मनुष्य सत्ता में समाहित एवं गुंथी हुई है। वह जीवन-संघर्ष का हिस्सा है। मानवीय संवेदना बढ़ी सहजता से प्रकृति संवेदना का रूप ग्रहण कर लेती है। पर यह रूप खुला और निखरा है, कृत्रिमता से अच्छादित नहीं। इनमें मनुष्य प्रकृति पर हावी नहीं हुआ है बल्कि वह उसके साथ रागात्मक सूत्र में बँधा हुआ है।

याद आता है मुझे अपना वह तरऊनी ग्राम

याद आती हैं लौचियाँ, वे आम

याद आती है मुझे मिथिला के रुचिर भूभाग

याद आते धान

याद आते कमल कमुदिनी और तालम/खन।