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Recycling of biodegradable waste by vermicomposting: Role of students for awareness

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Abstract

Our institute is inculcating a practical approach for sustainable development among the students and neighborhood community by a method of vermin-culture. The main objectives of this process is recycling of biodegradable solid waste through vermicomposting and to develop awareness among the students. Vermicomposting is a process where worms reared, cultured and their excreta used as a manure for the plants. This is a student participatory activity and helps to spread awareness. Through this activity department has also established a bonding with neighborhood community. Institute had provide a portable pit to the students who were staying nearby college and encourage them to setup a small unit of vermicompost at their home. Students learnt and understood the recycling of the biodegradable solid waste and developed their own vermicomposting pit in their houses and are producing vermicompost and vermiwash at their homes. This method is set up as a module for the sustainable development through recycling the biodegradable waste.

Keywords: recycling, biodegradable, vermicomposting

1. Introduction

Increase in the population leads to the generation of massive waste and to manage this waste is a serious problem today. Recycling and reduction of organic waste by physical and chemical processes are expensive [1]. To mitigate this problem vermiculture is one of the easy and cheap method. Vermiculture is the method of breeding and raising earthworm. The use of vermicomposting techniques reduces production costs and decontaminates the environment. The key product of vermiculture is worms, vermicompost and vermiwash. Vermicomposting technology is globally popular to manage the solid waste [2, 3]. Vermicompost is obtained from a wide variety of organic waste including residual sludge; when sewage sludge is managed with vermicomposting techniques, the resulting product supplies nutriments, more stable organic matter and works as a soil conditioner [1].

Students are pillar of our society, they have so many ideas about the world and future. It is the goal of the teacher to encourage them and do what they can to bring out the best in each of them. To use strength and enthusiasm of the students, in our college we have established a vermiculture unit to train them about the procedure and usage of vermicomposting. They are the real messengers to the society to spread awareness about the importance of recycling of biodegradable solid waste. In this paper we will discuss about process of vermiculture, vermicomposting, products of vermiculture and the role of students to create awareness among the neighborhood society for recycling of biodegradable solid waste through vermicomposting.

2 Procedure of Vermiculture

2.1 Species of Earthworm

There was a counting of 3500 species of earthworm known to man until the end of the 20th century [4, 5]. It belongs to phylum Annelida and class Oligochaeta most of the species belong to family, Lumbricidae. The various species used in vermiculture are *Allolophora, Aporrectodea, Bimastos, Dendrobaena, Lumbricus, Megascolex mauritii, Eisenia fetida, Eudrilus eugeniae, Perionyx excavatus, Lampito mauritii, Eisenia andrei, Lampito rubellus and Drawida willis*, etc. [6, 7, 8, 9]. *Eisenia fetida* known as redworm, brandling worm, red wiggler worm is the first choice for vericomposting as it is adaptable to changing conditions [10, 11, 12, 13, 14].

In our college we use two different species of earthworm, *Eisenia fetida* and *Pheretima elongate* for vermiculture.

2.2 Preparation of Vermiculture pit

Earthworms are often referred to as farmer's friends and natures ploughmen. Earthworms are extremely important in soil formation, principally through their activities in consuming organic matter, fragmenting and mixing it intimately with mineral particles to form aggregates [15]. The organic waste is converted to a bio-fertilizer by earthworms' action over a certain period of time [16]. Various feedstock have been employed in vermicomposting ranging from animal, plant, pharmaceutical, food and sewage waste over vermicomposting periods ranging from 28-120 days [17, 18, 19].

At our institution we have vermiculture bins which take care of the solid waste generated in our premises daily. We use kitchen waste and garbage from residential areas and the intuitional campus collected by students. The vermiculture bins are taken care by the students. The worm's feeds on the organic waste, in the process of feeding, earthworms fragment the waste substrate, enhance microbial activity and the rates of decomposition of the material, leading to a composting or humification effect by which the unstable organic matter is oxidized and stabilized. The end product, commonly termed vermicompost and obtained as the organic wastes pass through the earthworm gut is quite different from the parent waste material.

3. Products of Vermiculture

There are foremost three yields of vermiculture they are earthworms, vermi-compost and vermi-wash.

3.1 Earthworm

As vermiculture is the process of breeding and raising earthworm, the main product of it is earthworms. The multiplication of worms depends upon the temperature, moisture, pH, airing, particle size, capacity of cationic interchange (CCI), organism matter (OM), nitrogen (N) and C/N ratio of the soil [5]. These parameters regulate all the biological activities of the worm, temperature helps manipulate the lifecycle of the worm [20]. The production of worm biomass can also be considered pro-biotic feed for fishery, poultry industry [21].

3.2 Vermicompost

Vermicompost is an odourless, dark brown bio-fertilizer obtained from the process of vermicomposting [8, 22]. Vermicompost also called as vermicast is actually the casts expelled from the earthworm gut. The vermicompost thus formed is used as a fertilizer to improve the production of agricultural crops. The quality of the vermicompost is measured by the vermicompost biodegradability coefficient [23]. Vermicompost has substances such as humic acids (HA) and hormones that together regulate the growth and production of plants [24], and in the environmental field the worm helps alleviate environmental pollution and takes part into bio-accumulation and bio-remediation processes [25].

3.3 Vermiwash

Vermiwash is a leachate that is produced during the vermicomposting process and is dark brown in colour [26, 27, 28]. Vermiwash can also be used as a foliar spray whereby it acts as a pesticide in sustainable agriculture [29]. The quality of vermiwash produced by earthworms depends on the vermicompost that is used [30]. It is a non-toxic and ecofriendly compound, which arrests the bacterial growth and forms a protective layer for their survival and growth. Vermiwash at 5-10 percent dilution inhibits the mycelial growth of pathogenic fungi [31].

4. Advantage of Vermiculture

Composting is an effective 'zero waste' method for treating organic wastes, which follows nature's way of recycling. There are several advantages of composting such as, a safe treatment option for high nutrient waste and the production of natural fertilizer as an end product. Vermicomposting is in conservative side of resources like water, energy and land required for treatment of per unit of biowaste as compared to aerobic composting. Vermicomposting is rapid, low cost and sustainable alternative for organic waste treatment managed by earthworms, with the added advantage of more aesthetic, plant nutrients, humic acids and PGRs enriched compost in the slow-release form. The worm casts hold nutrient for a longer period without adversely impacting the environment. Vermicompost dramatically improves soil structure, texture, aeration, fertility, water holding capacity [illegible]ology. This replaces valuable nutrients taken out of the [illegible] crops are harvested.

5. Role of students to create awareness

In our institution students take part in the whole process of management and maintenance of vermiculture pit. They collect the biodegradable waste from their kitchen, from garden and college premises. They regularly monitored the maintenance of the pit. After completion of vermicomposting process they collect the manure or compost and vermiwash. During this process, students were enriching of the biodegradable solid waste by the process of vermicomposting. Few students developed their own vermicomposting pit at their homes (Fig. 1 and Fig. 2) and are producing vermicompost and vermiwash. These students were also trained to create awareness among their neighborhood community about importance of vermicomposting. They also help the people to install a vermicompost pit at their homes.

Fig 1: Portable vermicomposting pit at student's place

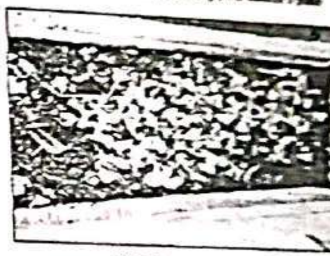

Fig 2: Vermicomposting pit

6. Conclusion

Vermiculture is a biological process. Vermicompost rich in high quality organic humus is used as organic amendments. The students play important role in increasing awareness about the vermiculture in the society. Therefore, it is essential to give proper training to them and make aware about the importance of recycling the biodegradable waste. In this regard our college is playing significant role to train the students and create awareness among the neighborhood society.

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Causes and effects of eutrophication on aquatic life

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ABSTRACT

The word 'eutrophic', comes from the Greek word eutrophos meaning well-fed. Human-induced pollution through the impacts of excessive fertilizer use, untreated wastewater effluents, and detergents significantly increases nutrient loading into lakes, accelerating eutrophication beyond natural levels and generating deleterious changes to the natural ecosystem The Eutrophication process has severe environmental impacts. Dead zones result from these impacts, which include algal blooms and hypoxia. Enhanced growth of aquatic vegetation or phytoplankton and algal blooms disrupts functioning of the ecosystem, causing a variety of problems such as lack of oxygen needed for fish and shellfish to survive. Control and management of eutrophication is a complex issue and will require the collective efforts of scientists, policy makers, and citizens to reduce nutrient inputs, to develop effective, long term bio-manipulation techniques, and to eventually restore aquatic communities.

KEYWORDS

Eutrophication | Algal blooms | Aquatic life

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Introduction

Eutrophication is characterized by excessive plant and algal growth due to the increased availability of one or more limiting growth factors needed for photosynthesis (Schindler 2006), such as sunlight, carbon dioxide, and nutrient fertilizers. Eutrophication occurs naturally over centuries as lakes age and are filled in with sediments (Carpenter 1981). Eutrophication is a process, both natural and anthropogenic of origin, which causes an increase in the supply of plant nutrients to natural waters and results in the growth of nuisance algae and higher aquatic plants. The term eutrophication has been defined invarious ways, ranging from "the natural aging of a water body to a eutrophic state, which occurs over very long (geological) time", to "the rapid rise in trophic status of a water body as a result of industrialization", which is sometimes termed "cultural eutrophication".

Eutrophication is a natural process whereby lakes, estuaries and slow-moving streams receive excess nutrients as a consequence of weathering of rocks and soils from the surrounding watershed. Increased nutrient inputs, particularly phosphorus and nitrogen, result in increased growth of aquatic plants and organic production of the water body. Young water bodies (lakes and man made reservoirs) usually are oligotrophic as they have low levels of nutrients and correspondingly low levels of biological activity. In contrast, old water bodies possess high biological activity as a consequence of high nutrient levels. These are referred to as eutrophic water bodies. The natural time scale from being oligotrophic to eutrophic is in the order of thousands of years, depending on the levels of encrusted minerals and on the rate of watershed weathering, among other environmental characteristics (Wetzel, 1975). These terms were first applied to lakes by Naumann in early 1900 (Naumann, 1919, 1927) noting that oligotrophic lakes contained modest levels of algae and were often found in igneous rock areas while eutrophic lakes contained high amounts of algae and were found in more fertile lowland regions. The author concluded that within a normal thermal range, levels of phosphorus, nitrogen and calcium are the primary determining factors of lake trophic status.

Causes of Eutrophication

The functioning of aquatic ecosystems is governed by dynamic balances. Eutrophication is an imbalance in functioning, triggered by a change in the quantity, relative proportions or chemical forms of nitrogen and phosphorus entering aquatic systems. The nature and intensity of responses also depends on environmental factors: long water residence times, high temperatures and a sufficient amount of light all stimulate eutrophication. Both continental and marine water ecosystems share the same general response mechanism to changes in nutrient flows (Claussen *et al.*, 2009): an increase in nutrient inputs causes an increase in plant biomass, gradually generating a decrease in light penetration in the water column. Aquatic ecosystems thus shift from a system with limited nutrient inputs to a system gradually saturated in nutrients, in which light becomes the new limiting factor.

Increasing global population growth and the development of urban concentration, agricultural industrialization and specialization of agriculture per region,

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HORMONAL REGULATION OF MIDGUT DIGESTIVE ENZYME ACTIVITY IN *APIS CERANA INDICA* (HYMENOPTERA: APIDAE)

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ABSTRACT:

In insects, there are various digestive processes like enzyme secretion, epithelial tissue regeneration, absorption of nutrients, working of gut musculature and maintenance of gut pH. These all activities are regulated by peptides of insect brain and midgut. Effects of brain and midgut epithelium on secretion of digestive enzymes have been investigated, employing an *in vitro* method, to ascertain direct action of the gut peptides. The large numbers of neuropeptides localized, isolated and structurally identified from different insect groups highlight the complexity of the neurosecretory system in regulating various physiological processes. During the bioassay experiment, brain extract showed on significant effect while midgut extract elevated significantly the amylase and protense activity. The role of midgut in the regulation of digestive enzyme activity is proved in *Apis cerana indica*.

Key words: - *Digestive enzymes, brain and midgut extract, bioassay, Apis cerana indica.*

INTRODUCTION:

Recently, ultrastructural and immunocytochemical studies have revealed various peptides in the neurosecretory cells in the brain and midgut endocrine cells in large number of insects similar to the vertebrate peptide hormones (Schols *et al.*, 1987; Remy and Veliemoniuge, 1988; Montuega *et al.*, 1989; Crim *et al.*, 1992; Schoofs *et al.*, 1993; Zitnan *et al.*, 1993; Lundquist *et al.*, 1994; Muraleedharan *et al.*, 1994; Nijhout, 1994; Veenstra *et al.*, 1995; Lehane, 1998; Lange, 2001; Wang *et al.*, 2001; Neves *et al.*, 2002; Tembhare and Rathee, 2005; Tembhare and Indurkar, 2005; Patankar and Tembhare, 2006).

According to some workers some neuropeptides recognized in the brain and midgut of insects represent sulfakinins, which stimulate digestive enzyme secretion (Schoofs *et al.*, 1990; Fonagy *et al.*, 1992; Predel *et al.*, 1999; Fuse *et al.*, 1999; Wei *et al.*, 2000; Harshini *et al.*, 2002a, b; Hill and Orchard, 2005). No information is, however, available on the hormonal regulation of digestive enzyme secretion in the Indian honey bee *Apis cerana indica*. The present work has, therefore, been undertaken on the Indian hive bee *Apis cerana indica* to analyze effect of brain and midgut extracts on the midgut digestive enzyme activity.

MATEIAL & METHODS:

Experimental Design

In order to investigate effect of brain and midgut extracts the bioassay technique has been used during the present study.

Bioassay apparatus

The bioassay apparatus is glass cylinder, 5 cm x 1 cm diameter open above fitted with a rubber stopper and hypodermic needle was inserted through the stopper at one side for the delivery of oxygen. The midgut preparation was suspended with another side of rubber stopper. The chamber of the bioassay apparatus contained incubation solution. The apparatus was kept in water bath at 37° C.

Preparation of brain extract

The brain was dissected out carefully in insect saline. Insect saline containing tissues were boiled for 10 min., to denature the hydrolytic enzymes present in them. It was cooled and homogenized in a glass homogenizer by hand. The homogenate was centrifuged at 10000 rpm for 10 min. The supernatant obtained was used as incubation solution in the bioassay. The concentration of the extract was adjusted to 2-brain/ 10ml insect saline.

Preparation of midgut extract

Alimentary canal was dissected out in insect saline. The midgut was cut behind the foregut and posteriorly just above the hindgut. The contents of the midgut were removed by injecting the insect saline into the open midgut tube and contents were flushed out. The epithelial tissue was washed in insect saline and transferred to fresh saline. The extract of the midgut epithelia was prepared as described above for the brain extract. The homogenate having a concentration equivalent to two midgut epithelia / 10 ml saline was bioassayed for its effect on *in vitro* digestive enzyme secretion in preparation of the midgut.

Preparation of midgut for bioassay experiment

Dissected midgut was taken out and washed in insect saline. Injecting saline into lumen of gut with a syringe and washed in several changes of insect saline flushed out the contents. The two ends of the open were legated with silken thread. The legated empty tubes thus prepared were used in the bioassay.

Bioassay experimental procedure

The midgut preparation was incubated with 2 ml of the incubation solution (midgut epithelial extract or brain extract) in the bioassay apparatus for 30 min., bubbling a gentle stream of oxygen. After incubation, the midgut preparation was taken out and washed in insect saline. The gut was opened and contents were collected in 0.5 ml distilled water by washing, for estimation of protease and amylase activity.

In control experiments, legated midgut tubes were incubated in insect saline.

RESULTS AND DISCUSSION:

Some bioassay experiments were conducted to study the effect of midgut extract (MGE) and brain extract (BE) on the midgut amylase and protease activity in the honeybee, *Apis cerana indica* and the results are given below.

EFFECT OF MIDGUT EXTRACT

Amylase activity

The midgut amylase activity is measured about 0.64±0.006, 0.67±0.011, 0.71±0.009 and 0.73±0.012 mg glucose/ midgut/ min. after incubation in midgut extract (MGE), while, it was observed about 0.58±0.009, 0.58±0.008, 0.58±0.0037 and 0.57±0.0081 mg glucose/ midgut/ min. in the control condition after 15, 30, 45 and 60 min. intervals, respectively. The present study shows that the amylase activity after incubation in MGE increases significantly ($P<0.0001$) in comparison to that in the control condition after 60 min. (Fig.1).

Protease activity

The midgut protease activity is measured about 0.83±0.010, 0.86±0.0031, 0.87±0.007 and 0.80±0.005 mg protein/ midgut/ min. after incubation in MGE, while it was noticed about 0.78±0.006, 0.81±0.008, 0.82±0.007 and 0.74±0.003 mg protein/ midgut/ min. in the

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ROLE OF HONEY STOMACH IN THE DIGESTION OF HONEY BEE APIS CERANA INDICA (F.)

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ABSTRACT:
In the honey bee the oesophagus expand into a large thin walled sac, commonly called crop or honey stomach. The honey stomach is well developed in the worker and play vital role to hold the nectar and accumulate in this reservoir. Basically honey stomach is in the form of sac with distensible walls. Histologically wall of honey stomach shows high folds in its epithelium enormous expansion of the sac. Scanning electron micrograph show epithelial pleats suggests the role in nectar processing. Histology of midgut also supports as the holocrine mode of secretion.

Keywords:Crop, Epithelial pleats, Midgut Histology, Apisceranaindica

INTRODUCTION:

The morphological and histological organization of alimentary canal of *ApisceranaindicaFabricius* is similar to *Apismellifera*. Alimentary canal is divided into three regions namely foregut, midgut and hindgut. Foregut is differentiated into pharynx, oesophagus, crop and proventriculus. All these parts are provided with well developed musculature. Extrinsic muscles are attached to the foregut and hindgut and works as dilators in insects (Snodgrass, 1953; 56;).

When a worker with its honey stomach filled with nectar reaches the hive, the nectar is either store directly in the cell or is given up to first to some other worker, who placed in a cell. The crop wall consist of three layers, the innermost is the epithelium with its cuticular intima and surrounded by two muscle layer and inner longitudinal layer and outermost circular layer (Schreiner, 1954, Brosch and Schreiner,1985). The cuticle consist of a thin epicuticle and thick procuticle with pore channels.

The proventriculus is highly specialized part of the foregut. In some insects, process of grinding the food into fine particles takes place largely in the proventriculus (Wiggleworth, 1927). The function of proventriculus in the worker is however to regulate the flow of food material from crop into the ventriculus and to the cells of the hive.

MATERIAL & METHODS:

In order to explore physiology of digestion and enzyme production in the commercially domesticated Indian honey bee, *A. ceranaindica* the present work has been undertaken, with materials and method describe below.

Honey which is made from the regurgited nectar, thus indeed contain some pollen but most of the pollen eaten by the bee is retain in the stomach as food. In the present study we have to explore the construction of the crop wall and processing of nectar in the honey stomach.

A) Material

The honey bee, *A. cerana F.* occurs in [illegible] China, India and other East Asian countries. It is widely distributed in India. The [illegible]

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status of this species has been established by Fabriceous in 1793 and Lindauerand Kerr (1950) suggested *A. ceranaindica* to be a correct name for the India hive bee.

A colony of *A. ceranaindica* has been established in two storied, ten framed Langstroth wooden hive at the garden of department of Zoology, RTM Nagpur University Campus, Nagpur through the year 2014-2018. During the present study, the bee- keeping procedures of Wadhwani and Chhabra (1972) and Singh (1975) have been followed.

During the present study, the bees were collected, whenever required from the established colony. The colony is found over populated during winter season while it is generally reduced during summer due to variation in flora and environmental conditions. In order to prevent swarming, queen cell were immediately destroyed and favorable conditions were artificially made (Singh, 1975). The following procedures were carried out.

B) Methods

Histological preparation

Fixation:

Honey bees were dissected under a stereoscopic binocular microscope and excised the alimentary canal, washed in a Ringer's solution. These tissues processed for histology, Bouin's fluid (aqueous) fixative used for histological studies.

Embedding and sectioning:

Tissues fixed in Bouin's fixative were transferred to 70% alcohol, dehydrated, cleaned in paraffin-infiltrated xylene and blocks prepared. For the block-making process, glass lids of staining jars and' L' brass parts were used as moulds. With a thin layer of glycerine moulds were internally powdered and molten paraffin wax was poured up to the brim in the moulds. To remove trapped air, the hot needle was passed in the molten wax and the tissue was gently placed at the desired orientation in the wax bed. Half an hour later, for uniform solidification and cooling of the wax bed, the mould was immersed in a water container. Tissues were cut at 5-6 µm on a rocking microtome Cambridge model in transverse sections and mounted on a slide.

Sections were deparaffinized in xylene and passed down alcohol grade to the water. Then stained in hematoxylin (5-10min) and kept in running water. The sections were kept in eosin (10min). Then sections dehydrated through a series of alcohol up to 90% to absolute alcohol for 10 min each. Cleared the section in xylene for 10 min then sections were mounted in DPX. The slides were microscopically examined (Karl Zeiss) and photographed in Tucsen camera.

Scanning Electron Microscope (SEM) study of the crop, midgut and intestine in *Apisceranaindica*

The *Apisceranaindica* was dissected, tissues were taken out washed with phosphate buffer (PB) then selected tissues were placed in fixative prepared by mixing 2.5% glutaraldehyde containing 2% paraformaldehyde in 0.1 M PB. The pH of PB was maintained at 7.4. Tissues were kept in fixative overnight. After fixation, tissue was washed with PB 2 to 3 times. Tissues were then dehydrated in the graded series of alcohol i, e 30%,50%, 70%, 90% and absolute alcohol. After treatment by graded series of alcohol, tissues were subjected to complete critical point drying. Finally, tissue was coated with gold to be observed under an under Zeiss EVOMA10 and JEOL 6380A scanning electron microscope at 20 KV/EHT, Visvesvaraya National Institute of Technology, Nagpur.

RESULT & DISCUSSION:

Observation:

Crop

Cross section of honey stomach of worker bee shows elongated and separated epithelial layer. Basement cells are brush bordered to permit the

Elements of Research Based Pedagogical Tools for Teaching Science

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ABSTRACT

Now-a-days computers and internet provides oceans of information to the learners at their fingertips. Therefore, to maintain the pace with the present generation of learner who are digital natives, the real challenge is faced by the teacher. The conventional role of teacher to provide information has shifted to a role of mentor or a facilitator. Teaching science with conventional method at Higher Education Institutes (HEIs) often involves lectures being given to a large group of students accompanied by practicals, workshops and with some independent study. But teaching science in the 21st century must include teaching them to think, acquire, solve the real life problem and make knowledgeable conclusions. It is important to inculcate the qualities like inquiry and critical thinking amongst students, as these skills are useful to students from school to career. Research-Based Pedagogical Tools (RBPTs) are research as a pedagogical tool to build an environment for the students which promotes learners to think beyond the textbooks and do some research to understand the concept in more concrete way. In this paper we will discuss about elements of research-based pedagogical tools for teaching science at higher educational institutes.

Keywords: Research-Based Pedagogical Tools, Higher Education Institutes, Inquiry, Critical thinking.

Science from the Latin word Scientia, meaning "knowledge" (Douglas, 2014) is a systematic enterprise that builds and organizes knowledge in the form of testable explanation and predictions about the universe (Welson, 1999 and Heilbron, 2003). It involves systematic inquiry, data collection on the basis of principles, theories and observation based on knowledge. Science teaching involves creating a learning environment wherein each learner deals with problem situations, engages in reflection within one self and with others, looks for concrete evidences and thereby construct one's own knowledge (mooKIT).

Wang and Reeves (2003) point out that many educators, as well as people in the general public, believe that computers and the internet are simply much more powerful educational tools, therefore teaching science with traditional methods would not be appropriate for today's learner. Although large-scale success stories in real, school-based applications of educational technologies have been exceedingly rare (Cuban, 2001).

According to theory of social facilitation, the people often perform better in the presence of others than alone (Cook, 2001). Working in groups is thought to better enhance students' learning perceptions, problem solving skills and overall learning abilities than learning alone (Hiltz *et al.* 1999). Blending research with teaching can acts as an effective vehicle for developing true scientific understanding,

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Management of Various Types of Waste Using Vermiculture

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Keywords

Vermicomposting, Earthworm, Waste management, Degradation

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ABSTRACT

Waste materials developed by industrialization, agriculture and domestic activities is a serious problem nowadays and the modern technologies used for its management has ill effects on the environment and health. Vermicomposting is an ecofriendly, pollution free and cost effective methodology which may solve the problem of processing and management of the waste to a larger extent. Earthworms are the key invertebrate present in the soil helpful in decomposition of organic matter and waste, producing bio-fertilizer. The microflora in the intestine of the worm and gut enzymes along with the microflora present in the waste are involved in the degradation of different types of organic biomass into value added materials. This paper talks about how vermiculture is constructive solution to manage solid waste.

Introduction

Earthworms are intestine of the earth, as said by Aristotle, is confirmed and found correct even today. The science of breeding and raising earthworm is called as vermiculture, which in turn used to manage solid waste. With the increase in the population, industrialization, agriculture and domestic activities there is tremendous generation of solid waste and with this increase comes an increased need for management of wastes. Vermicomposting technology is globally popular to manage the solid waste (Gomez-Brandon *et al.*, 2012; Manyuchi *et al.*, 2013). Vermicomposting is a simple biotechnological process of composting, in which certain species of earthworms are used to enhance the process of waste conversion and produce a better end product (Saranraj and Stella, 2012). In this technique bioconversion of solid waste into a bio-fertilizer or vermicompost takes place due to the activity of earthworm (Manyuchi *et al.*, 2012). It is a simple, inexpensive, energy efficient and ecofriendly technique.

Vermicompost is obtained from a wide variety of organic waste including residual sludge; when sewage sludge is managed with vermicomposting techniques, the resulting product supplies nutriments, more stable organic matter and works as a soil conditioner (Del Aguila Juárez *et al.*, 2011). This review

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Recycling of biodegradable waste by vermicomposting: Role of students for awareness

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Abstract
Our institute is inculcating a practical approach for sustainable development among the students and neighborhood community by a method of vermin-culture. The main objectives of this process is recycling of biodegradable solid waste through vermicomposting and to develop awareness among the students. Vermicomposting is a process where worms reared, cultured and their excreta used as a manure for the plants. This is a student participatory activity and helps to spread awareness. Through this activity department has also established a bonding with neighborhood community. Institute had provide a portable pit to the students who were staying nearby college and encourage them to setup a small unit of vermicompost at their home. Students learnt and understood the recycling of the biodegradable solid waste and developed their own vermicomposting pit in their houses and are producing vermicompost and vermiwash at their homes. This method is set up as a module for the sustainable development through recycling the biodegradable waste.

Keywords: recycling, biodegradable, vermicomposting

1. Introduction
Increase in the population leads to the generation of massive waste and to manage this waste is a serious problem today. Recycling and reduction of organic waste by physical and chemical processes are expensive [1]. To mitigate this problem vermiculture is one of the easy and cheap method. Vermiculture is the method of breeding and raising earthworm. The use of vermicomposting techniques reduces production costs and decontaminates the environment. The key product of vermiculture is worms, vermicompost and vermiwash. Vermicomposting technology is globally popular to manage the solid waste [2, 3]. Vermicompost is obtained from a wide variety of organic waste including residual sludge; when sewage sludge is managed with vermicomposting techniques, the resulting product supplies nutriments, more stable organic matter and works as a soil conditioner [1].

Students are pillar of our society, they have so many ideas about the world and future. It is the goal of the teacher to encourage them and do what they can to bring out the best in each of them. To use strength and enthusiasm of the students, in our college we have established a vermiculture unit to train them about the procedure and usage of vermicomposting. They are the real messengers to the society to spread awareness about the importance of recycling of biodegradable solid waste. In this paper we will discuss about process of vermiculture, vermicomposting, products of vermiculture and the role of students to create awareness among the neighborhood society for recycling of biodegradable solid waste through vermicomposting

2 Procedure of Vermiculture
2.1 Species of Earthworm
There was a counting of 3500 species of earthworm known to man until the end of the 20th century [4, 5]. It belongs to phylum Annelida and class Oligochaeta most of the species belong to family, Lumbricidae. The various species used in vermiculture are *Allolophora, Aporrectodea, Bimastos, Dendrobaena, Lumbricus, Megascolex mauritii, Eisenia fetida, Eudrilus eugeniae, Perionnyx excavatus, Lampito mauritii, Eisenia andrei, Lampito rubellus and Drawida willis*, etc. [6, 7, 8, 9]. *Eisenia fetida* known as redworm, brandling worm, red wiggler worm is the first choice for vericomposting as it is adaptable to changing conditions [10, 11, 12, 13, 14].

In our college we use two different species of earthworm, *Eisenia fetida* and *Pheretima elongate* for vermiculture.

2.2 Preparation of Vermiculture pit
Earthworms are often referred to as farmer's friends and natures ploughmen. Earthworms are extremely important in soil formation, principally through their activities in consuming organic matter, fragmenting and mixing it intimately with mineral particles to form aggregates [15]. The organic waste is converted to a bio-fertilizer by earthworms' action over a certain period of time [16]. Various feedstock have been employed in vermicomposting ranging from animal, plant, pharmaceutical, food and sewage waste over vermicomposting periods ranging from 28-120 days [17, 18, 19].

At our institution we have vermiculture bins which take care of the solid waste generated in our premises daily. We use kitchen waste and garbage from residential areas and the intuitional campus collected by students. The vermiculture bins are taken care by the students. The worm's feeds on the organic waste, in the process of feeding, earthworms fragment the waste substrate, enhance microbial activity and the rates of decomposition of the material, leading to a composting or humification effect by which the unstable organic matter is oxidized and stabilized. The end product, commonly termed vermicompost and obtained as the organic wastes pass through the earthworm gut, is quite different from the parent waste material.

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NEUROANATOMICAL STUDY OF INDIAN MAJOR CARP, *CATLA CATLA* (HAM.)

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ABSTRACT:

Kluver and Barrera and Aldehyde fuchsin histochemical methods were used to study neuroanatomy of the olfactory organ, forebrain and pituitary gland in the major carp *Catla catla*. Organization of olfactory system in the *C. catla*, divided into sensory and nonsensory components. The sensory component consists of large number of olfactory receptor neurons (ORNs) that release axons forming over the olfactory nerve. The olfactory nerve fibers penetrate the bulb, spread along the periphery and possibly make synaptic contacts with the dendrites of the mitral cells. The olfactory bulb is divided into four layers, outer layer is olfactory nerve layer (ONL), below ONL, Glomerular layer (GL) is present. Olfactory bulb was connected to the forebrain by the medial olfactory tract (MOT) and the lateral olfactory tract (LOT). Forebrain was divided into telencephalon and diencephalon. In the telencephalon, larger size neurons forming a cluster adjacent to the lateral forebrain bundle (LFB) i.e. nucleus entopeduncularis (NE). Diencephalon was divided into preoptic area, hypothalamus, thalamus and epithalamus. In the Preoptic area, Nucleus preopticus (NPO) was divded in to Nucleus preopticus pars parvocellularis (NPOp) and pars magnocellularis (NPOm) were AF-positive. On the ventro-lateral side of the horizontal commissure (HC) in the preoptic area, nucleus of HC was localized. In the hypothalamus, behind the HC, tuberal area starts. In tuberal area, nucleus hypothalamicus (Nh), nucleus lateralis tuberis (NLT), nucleus recesses lateralis (NRL) and nucleus inferior lobi (NIL) prominently observed. Above hypothalamus, thalamus shows thalamic nuclei. Epithalamus show paired habenular ganglia over thalamus. Pituitary gland shows pars intermedia (PI), proximal pars distalis (PPD) and rostral pars distalis (RPD).

Key words: - Neuroanatomy, Olfactory organ, Forebrain, Pituitary gland.

INTRODUCTION:

Teleost represent the most abundant group of bony fishes covering about 28,400 species (Nelson, 2006). In fishes, olfaction is the most important sense, for the various kinds of behaviors such as feeding, homing, migration, reproduction and social interactions (Hara, 1967; Liley, 1982; Hara 1986; Doving, 1986; Satou, 1990). The olfactory bulb is the first relay station receiving primary olfactory nerve inputs, sending in its turn the output signals to several target areas in the telencephalon and diencephalon. In the fishes, teleost brain has comparable pattern as that of the other vertebrates but the exceptional feature is the absence of median eminence in teleost, so hypothalamic neurons directly innervating the pituitary cells. Therefore, teleostean hypothalomo-hypophysial system, offers a simple model to determine the anatomical relationship between the specific neurons. In teleost, forebrain was divided into telencephalon and diencephalon. Cytoarchitectonic pattern of the forebrain of teleost was studied in a several group of fishes (Ramakrishna and Subhedar, 1991; Arevalo *et al.*, 1991; Riedel, 1997; Rodriguez-Gomez *et al.*, 2000; Cerda-Reverter *et al.*, 2001; Bhute *et al.*, 2007; Baile *et al.*, 2008). Stereotaxic atlas for the forebrain nuclei of the goldfish *Carassius auratus* (Peter and Gill, 1975) and the killifish: *Fundulus heteroclitus* (Peter *et al.*, 1975) were also studied. Cytoarchitectonic pattern and the

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CHROMOSOMAL ANALYSIS OF CATFISH, *CLARIAS GARIEPINUS* (L.)

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ABSTRACT:

Clarias gariepinus is an African catfish, commonly found in most of the regions of India. This is a fast growing and hardy fish as compared to other indigenous catfishes. In the present investigation, chromosome number and karyotyping of C. gariepinus are performed. By using phytohemagglutinin (PHA) activated whole blood cell culture, metaphase chromosomes were isolated and studied. Metaphase shows that it has 2n=54 number of chromosomes. The chromosomes are further classified as 08 metacentric, 22 submetacentric, 14 subtelocentric and10 telocentric. This study is important for knowing genomic constitution of this fish as well as it is useful for hybridization with other indigenous catfishes.

Keywords: *Chromosomes, Karyotype, Clarias gariepinus*

INTRODUCTION:

In inland water bodies, carps and catfishes dominate the production but most of the work related to genetics is carried out on carps only (Khuda-Bukhsh, 1980; Manna, 1983) and among the catfishes cytogenetics work on *Clarias batrachus* and *Heteropneustes fossilis* (Dutta-Munshi and Hughes, 1992) is reported. For the viable hybrid progeny, compatibility of diploid (2n) number of chromosomes of proposed species is the most important factor. *Clarias gariepinus,* selected for the present study is fast growing fish and is a good model for fish hybridization. Karyotype study of fish is also used in taxonomic arrangement in classification and identification. Karyological studies in fish have shown potentials in increasing knowledge in the fields of genetics, taxonomy, evolution, systematics, mutagenesis, environmental toxicology and aquaculture (Kligerman and Bloom, 1977; Cucchi and Baruffaldi, 1990) In other animals like aves, 211 species belonging to 99 genera karyologically are known (Mohanty, 2004) but very less information is available on chromosomes of many of the fish species in general including the fish *Clarias gariepinus*. To elucidate the knowledge of chromosomal number and pattern, studies on this fish are carried out.

MATERIAL & METHODS:

Fish were collected from the local market, acclimatized in laboratory conditions for one week, anesthetized with2-phenoxyethanol and blood was collected from heart by puncturing with needle syringe coated with heparin. Blood was centrifuged in transparent centrifuge tube for 15 min. at 400 g. Plasma was carefully removed without disturbing the interface. Interface was collected with syringe or Pasteur pipette and diluted 1: 1 in a serum free medium. Incubation was done in 2 X 10^6 cells/ml of the [illegible] DMEM/F10FBS 50/50

PHYTOREMEDIATION : ASUSTAINABLE SOLUTION FOR AQUATIC POLLUTION

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Abstract: *Lakes are the convenient source of water to meet the domestic and industrial needs of town. They are also important in maintaining the ground water level, aesthetic value and ecosystem of surrounding area. Lakes have very sensitive and complex ecosystem as they do not have self-cleaning ability and therefore readily accumulates pollutants. Amongst the various anthropogenic activities, discharge of sewage is the major cause of eutrophication leads these beautiful water bodies under great environmental threat. In this paper/article a case study of Naik Lake is discussed. During investigation it was observed that values of many physico-chemical parameters were higher than permissible limits of BIS standards. Study of phytoplankton diversity and occurrence of some pollution indicator species indicates high degree of organic pollution and eutrophic nature of Naik Lake. Certain phytoremediation techniques such as Phytorid Technology and Artificial Floating Islands (AFI) must be used by municipal corporations for the sustainable development of such natural resources. This paperalso aims to collect information and popularize the eco-friendly techniques for ecorestoration of lakes.*

Key words: *Lake pollution, phytoremediation, phytorid technology, Artificial Floating Island (AFI).*

Introduction :

The lakes are built for the aesthetic purpose as well as they are important components of the artificial water collection system. Their contribution to the ecosystem functions is also very significant.But, most of the lakes are degraded, depleted or contaminated mainly by various anthropogenic activities. Hence to combat with such types of environmental pollution certain eco-friendly and sustainable technologies must be adopted by municipal corporations, civic societies and other competent authorities.

Common sources of water pollution:

Freshwater biomes have suffered mainly from pollution. Runoff containing various types of pollutants such as industrial waste, fertilizers etc. added into lakes, ponds and rivers which increases algal growth and ultimately support process of eutrophication. After the death of algal material it settles down at the bottom of aquatic body and increases organic pollution. This has very adverse effects on flora and fauna of water bodies. Amongst the various anthropogenic activities, discharge of sewage is the major cause of eutrophication

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Review Article

Causes and effects of eutrophication on aquatic life

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ABSTRACT

The word 'eutrophic' comes from the Greek word eutrophos meaning well-fed. Human-induced pollution through the impacts of excessive fertilizer use, untreated wastewater effluents, and detergents significantly increases nutrient loading into lakes, accelerating eutrophication beyond natural levels and generating deleterious changes to the natural ecosystem The Eutrophication process has severe environmental impacts. Dead zones result from these impacts, which include algal blooms and hypoxia. Enhanced growth of aquatic vegetation or phytoplankton and algal blooms disrupts functioning of the ecosystem, causing a variety of problems such as lack of oxygen needed for fish and shellfish to survive. Control and management of eutrophication is a complex issue and will require the collective efforts of scientists, policy makers, and citizens to reduce nutrient inputs, to develop effective, long term bio-manipulation techniques, and to eventually restore aquatic communities.

KEYWORDS

utrophication | Algal blooms | Aquatic life

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BIOCHEMICAL CHARACTERIZATION OF SOME CYANOBACTERIA

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ABSTRACT:

Cyanobacteria are most commonly useful organism, storing reserve food in the form of cyanophycean starch, protein, carbohydrate, lipids and vitamins. These are the basic dietary supplements of human food. With the increasing population it is not possible for many countries to meet their food needs with the use of only conventional food sources. Hence it is suggested that unconventional sources of food specially drawn from cyanobacteria can be used to meet the needs of global food meet. In presented study, the biochemical constituents were analyzed in the term of total carbohydrates, total protein, total lipid contents and amino acid. Cyanobacteria used in this investigation were collected from various area of Bhagpur and Wardha district. In this study it is showed that maximum amount of total carbohydrate (21 % dry weight) was recorded in *Oscillatoria spp.* Maximum amount of total protein (60 % dry weight) were recorded in *Spirullina platensis* and maximum amount of lipid (10.11 % dry weight) were recorded in *Nostoc ellipsosporum*. Whereas, various common amino acids were also recorded in investigated cyanobacteria.

Keywords: Cyanobacteria, unconventional food, protein, carbohydrate, lipid.

INTRODUCTION:

The Cyanobacterial group is a diverse group of prokaryotic organisms that evolved in the Pre-cambrian era, approximately 3.5 billion years ago . They are thought to be responsible for the oxygenation of the earth's atmosphere, 1 billion years after their appearance in the fossil record . The ability to survive in warm temperatures, high light, and low carbon dioxide concentrations has allowed the cyanobacteria to radiate into a broad range of habitats, including hot springs, frigid Antarctic lakes and soils, and extreme euryhaline and eurythermal environments. Cyanobacteria have a great deal of potential as source fine chemicals, as a biofertilizer and as a renewable fuel Recently, there has been increasing awareness about using cyanobacteria as bioremediation and pollution control agents, because they are environmental friendly and do not cause toxicity in other biotic components and their biomass production is in abundance and this can be used as a feed for animals, food industries, biotechnological applications and pharmaceutical industries (Rastogi and Sinha, 2009).

Cyanobacteria are one of the useful organisms widely used in food industries and in few biotechnological applications (Becker and Venkataraman,1967; Thajuddin and Subramanian, 2005).They store reserve food materials which can be used as the source of pigments, lipids, vitamins, proteins and certain secondary metabolites (Cardozo et al., 2007). Cyanobacterial protein has received worldwide attention for either as food supplement or as an alternative source of food. Some species of *Anabaena, Nostoc* and *Spirulina* are consumed as food due to their high protein and fiber

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Seasonal Histomorphological Changes In The Testes Of *Channa Striata*

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Abstract

Striped snakehead, *Channa striata* is commonly known as mural (murrel). Due to its air breathing habit and hardy nature,it is found quite frequently in shallow or deep parts of rivers, lakes etc., with or without aquatic vegetation throughout India. Striped snakehead*C. striata* breeds annually in the natural water bodies. The sequence of spermatogenesis in *C. striata* is morphogically and histologically divided into 5 stages viz. resting, preparatory, pre-spawning, spawning and post-spawning. The testicular cycle of *C. striata* from Nagpur region are workout. The fish spawn only once in a year in this region. *C. striata* the testes are paired which are elongated flattened structures, situated on either side, ventral to the kidneys in the posterior region of the abdominal cavity. The testes remain attached to the body wall by means of mesorchia. They are equal in size. Sperm duct join posteriorly to open into the urinogenital papilla. Each testis contains numerous spermatozoa of different stages of development and degeneration. The wall of the testes is fairly thick during non-breeding season but become thin and highly vascular during spawning period. The testes were processed by standard histological technique. Histological characteristics of testes show well differentiated stages (i-iv) of maturation.

Keywords: - testes, histology, *Channa striata*

Introduction

Snakehead, *Channastriata* (Bloch, 1793)is hardy fish because of its air breathing habit. The biological process, especially the reproductive biology is the most important factor concerning the successful management of fisheries and mobilization of seed resources. Teleost are annual breeder, biannual breeder or multiple breeder depending upon the occurrence of egg laying. According the reproductive cyclical changes ensued in the gonads of fish. Depending upon the gonado-somatic index different phases were reported in reproductive cycle of teleosts. These phases described differently in several teleosts by different names. Thus reproductive cycle could be divided into resting phase,preparatory phase,prespawing phase,spawning phase and postspawning phase in *Labeo rohita* (Sonarghare,2010),*Heteropneustes fossilis* (Sonparote,2010) and in *Channa punctate punctate* (Salame and Masram,2019) . Teleosts exhibit variations in testicular structure and spermatogenic patterns.(Grier ,1998).

Material and Methods

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ROLE OF INTERNET ON ENVIRONMENT

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Abstract: *Environmental pollution is the outcome of industrialization and urbanization which causes irreparable damage to terrestrial and aquatic environment. In this modern era, the information and communication technologies are growing very rapidly which remodel our future society. The digital technologies are responsible for about 4% of global carbon emission, which looks relatively small but its contribution is similar to that of aviation industry. To understand the impact of information era, it is necessary to identify the environmental aspects of information and communication technology. In this paper, the discussion is based on role of internet on environment. This study is focused on internet infrastructure and to analyze its environmental impact. Here the discussion is also on the possible solution to minimize internet impact on environment.*

Key words: *Internet, environment, pollution.*

Introduction:

Excess of anything is not good and it creates nuisance andthisis very appropriate in today's scenario for unrestricted and excess use of internet. In present era, the whole world is churning about various types of environmental pollution like air, water, noise and soil pollution and most of them are because of unscrupulous anthropogenic activities. Same is happening with the excess use of internet by millions of peoples in the world which adversely impact on their social and personal life. Many studies have already proved that social media addiction increased the level of depression in many peoples around the world. Justin Rosenstein was the engineer who invented Facebook "Like" button has removed the app from his mobile phone over the fear the psychological effects apps are having on the people from every corner of the world. Internet is creating similar type of havoc on the environment too.

Many of us are thinking that, using internet is a green practice. It allows us to shop online, bank online, paperless work, attain meetings from any corner of the world online instead of flying around the world. Here question arises, is it really so? Off course many things are replaced by internet which makes it one of the important tool in modern era.As compare to the traditional activities, internet's carbon footprint is low but it does not mean it is totally innocuous (Marcus Hurst, Jan.2014)[5]. But one thing we all should keep in our mind that it is just a tool and it is created by we humans so; we must control it, let internet should not control us. Internet is only a kind of development and it is fact that everyone has to pay the price of development, but at what cost? The cost should not be the destruction of our environment.

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Wetland Flora of Gorewada International Biopark, Nagpur, India

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(b): Rahul B. Kamble, Sandeep G. Hate, Alka Chaturvedi (2021). Wetland Flora of Gorewada International Biopark, Nagpur, India. Advances in Zoology and Botany, 9(1), 28 - 36. DOI: 10.13189/azb.2021.090105.

Abstract Gorewada reservoir and adjacent area (1885 Ha) now converted into International Biopark abodes a variety of plant community to its credit. A study has been carried out to elucidate the aquatic flora with diverse plant wealth, indicator plants and their ecological status in wetlands of Gorewada catchment area.114 plants species with 33 families have been identified from the Gorewada wet land area. 67 species belong to dicotyledons and 47 are monocotyledons.

Keywords Gorewada International Biopark, Nagpur, Wetland Flora, Indicator Categories

. Introduction

Biodiversity accomplishes all vital requirements of ganisms to complete their life cycle and amongst mans indirectly or directly dependent on both terrestrial well as aquatic biodiversity, as both biodiversities vides natural resources in all ways to humans like ural, economic, aesthetic, educational and scientific Biodiversity covers all organisms like microorganism, s and animals along with its all diverse genetic tions in species, varieties and populations in different ats, ecosystems and in their natural areas, and its s increases richness in natural environment [1]. Wetlands are vital parts of the hydrological cycle, highly productive, support exceptionally large biological diversity and provide a wide range of ecosystem services, such as food and fibre; waste assimilation; water purification; flood mitigation; erosion control; groundwater recharge; microclimate regulation; enhance aesthetics of the landscape; support many significant recreational, social and cultural activities, besides being a part of our cultural heritage [2].

The composition of a plant community is determined by a complex interaction of several biotic as well as abiotic factors including climate, soil type, position in the landscape and competition between plant species. Amongst which wetlands are the very important aquatic ecosystem, which maintains the balance in environment. Wetlands have seasonal variation in its floristic composition. Consequently, botanical explorations of wetland plants are necessary to gain more knowledge on species richness as well as their geographical distribution. Works on floristic studies of documentation of diversity of aquatic plants and wetlands flora in various water reservoirs and wetland areas of different states of India were carried out by many workers [3,4,5,6,7,8,9,10]. Besides these there are several researchers from Maharashtra state and its various districts and regions, explored the aquatic and wet lands plants diversity [11,12,13,14,15,16,17,18,19,20,21, 22].

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Fruits, seeds at elevated co_2 in cotton & tur in Nagpur district

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Abstract
There is a significant impact of elevated CO_2 on the N concentration of plant tissues and present data to support the hypothesis that reductions in the quality of plant tissue commonly occur when plants are grown under elevated CO_2. To study response of plants in high CO_2 and other gas in environment with precise control and regulation of desired CO_2, temperature and humidity inside the Open Top Chambers. Open Top Chambers is an innovative and cost-effective approach to investigate effects of elevated CO_2, Temperature and humidity on the growth dynamics and yield response of plants. In this approach CO_2 gas is supplied to the chambers through CO_2 gas cylinders and maintained at the set levels using manifold gas regulators, pressure pipelines, solenoid valves, sampler, pump, CO_2 analyser, PC linked supervisory control ad data acquisition (SCADA). The different conditions used for the experiment are as follows: AMB: Ambient Outside, OTC1: Ambient CO_2 (Control), OTC2: Elevated CO_2 (450ppm) + Ambient Temp, OTC3: Elevated CO_2 (500 ppm) + Ambient Temp, OTC4: Elevated CO_2 (550ppm) + Ambient Temp. Thus, on the basis of the study results, it is concluded that there is noticeable change in the number of fruits on Cotton, and Tur crops in the study area.

Keywords: OTC, elevated CO_2, ambient, cotton, tur

Introduction

At the beginning of the 21st century, we are faced with a rapid change in the environment. Greenhouse forcing is expected to alter temperature and rainfall patterns and atmospheric CO_2 concentration will continue to increase for an extended period of time. There can be no doubt that under future conditions, agro-ecosystems and their management will substantially differ from today and potential ozone impacts in the agricultural sector will depend largely on changes in other factors. Hence, the evaluation of future trends in ozone impacts cannot rely solely on trends in ground-level ozone concentrations predicted by atmospheric global climate change, caused by increased emissions of greenhouse gases, is likely to affect agroecosystems in many ways, but the outcome, for instance, as a shift in productivity, depends on the combined effects of climate (temperature, precipitation) and other global change components.

Once environment and diseases are closely related, climate change will probably alter the geographical and temporal distribution of phytosanitary problems. The host plant groclimatic zoning for coffee will be altered, as showed by ssad *et al.* (2004) [1]; likewise, pathogens and other icroorganisms related to the disease process will be fected. Therefore, new diseases may arise in certain gions and other diseases may cease to be economically portant, especially if the host plant migrates into new as (Coakley *et al.*1999) [2].

ease simulation models frequently used for forecasting be utilized in simulation studies of spatial and temporal ribution in future climate scenarios. For vector-smitted pathogens the risk analysis may include cts of climate change on the vector population ussed by Harrington (2002) [3] the barley yellow f disease.

Using mathematical models, Carter *et al.* (1996) [4] simulated climate change in Finland and concluded that warming will expand the cropping area for cereals by 2050 (100 to 150 linear km per Celsius degree increase in mean annual temperature); furthermore, higher yields are expected with higher CO_2 concentration. In this scenario, potato cropping will also be benefited with an estimated 20 to 30% increase in yield.

Thomas and Strain (1991) [3] reported that the main effect of CO_2 enrichment was to triple the number of branches and to increase total branch length six times. Enhanced and accelerated branching also increased total leaf area 50% at elevated CO_2 concentrations.

Atmospheric CO_2 is the sole carbon source for plants. Current levels of CO_2 limit CO_2 assimilation in C_3 crops and increasing CO_2 concentrations up to 800–1000 ppm stimulate photosynthesis (Amthor, 2001) [6]. However, stimulation of photosynthesis does not directly translate in increased biomass, or yield. In determinate crops such as cereals, grain yield not only depends on photosynthesis bu also on the length of the active phase of leaf photosynthesi and the sink capacity of the grains. Fangmeier *et al.* (2000 [7] found that in barley (*Hordeum vulgare*, L.), elevated CO increased the nitrogen (N) sink capacity of the grains combination with accelerated flag leaf senescence, which, turn, reduced the length of the period of photosynthe carbon acquisition.

Cotrufo *et al.*, (1998) [8] studied the impacts of elevated C on the N concentration of plant tissues and present data support the hypothesis that reductions in the quality of pl tissue commonly occur when plants are grown un elevated CO_2. Synthesis of existing data showed an aver 4% reduction in N concentrations in plant tissue gener elevated CO_2 regime

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Ammi majus: A plant with multifunctional medicinal properties

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Abstract
Ammi majus L. belongs to family Apiaceae is one of the unique source of various types of chemical compounds, which are responsible for a variety of activities. It has various medicinal properties and is useful in the treatment of leucoderma, vitiligo, as a diuretic, emmenogogue, abortifacient and blood purifier. *A. majus* extracts showed significant biological activity such as antiviral, antimicrobial, antioxidant, relaxant effect, cardiovascular effect, hypotensive etc. More than fifty bioactive phytochemicals were isolated from the particular plant species but the main groups of phytochemicals that are potential against different biological activities are flavonoids and coumarins. The purpose of this review was to provide a brief summary of the knowledge of biopharmaceutical effects of secondary metabolities of *Ammi majus* L. and the mechanism of their action. As the worldwide scenario is now changing towards the use of non-toxic plant products having traditional medicinal use, development of modern drugs from *Ammi majus* L. should be emphasized for the control of various diseases.

Keywords: *Ammi majus* L., leucoderma, vitiligo, xanthotoxin and psoralen

Introduction

Ammi majus L., a member of family Apiaceae, is an important medicinal plant. The botanical name *Ammi majus* L. is derived from two Greek words - *Ammi* (Dioscorides), from the Greek term 'ammos' meaning sand and refers to the plant's habitat and 'majus' meaning bigger or larger. The standard author abbreviation L. is used to indicate Carl Linnaeus (1707 – 1778). Its common names are Astrilal, Bishop's weed, Greater *Ammi*, False Queen Anne's lace, Bullwort, Lace flower and Honey flower.

Ammi majus L. is a native of Nile Delta of Egypt and widely grown throughout the Mediterranean region, Abyssinia, Africa and some parts of Egypt. In India, it was first introduced in the Forest Research Institute, Dehradun, in 1955 through the efforts of UNESCO. Since then its experimental cultivation has been tried in several parts of the country including Jammu, Dehradun, Mumbai, Chennai, Delhi and Punjab.

It is stout, erect, coarse and glabrous. The stem is round and solid with tap root system. Its large leaves are 5-8 cm long, alternate, and light green, decompound, pinnately divided and lanceolate in shape. The inflorescence is umbel, axillary and terminal in position with flowers white in colour. Calyx tube is adnate to bracts, 5 in number and teethed. Petals -5, epigynous, distinct and bifid. Stamens - 5, epigynous, alternate with petals. Ovary is inferior, 2 celled, disk epigynous, 2 lobed, ovule solitary in each cell. Style - 2, stigma is minute and capitulate. The flowering is seen after 3-4 months of seed sowing. Fruit is pod, ribbed, ellipsoid, greenish brown in colour, turning reddish brown on maturity and is ready within 30-35 days from blossoming of flower. The seeds are flat bearing thin wings, having a characteristic terebinthinate odour becoming strong on crushing with extremely pungent and slightly bitter taste.

Medicinal Uses

Most of the plant species detected as medicinal plants have been used to treat human diseases for centuries as medications or prevention of ailments because the plant species contain significant active phytochemicals such as flavonoids, coumarins, alkaloids, terpenoids, amino acid, essential oil with therapeutic value (Maritrathu P., 2008; Nostro, 2000; Milic, 2000) [18, 41, 39]. *Ammi majus* L. is widely used for the treatment of skin disorders such as psoriasis and vitiligo (acquired leukoderma) (Egyptian Pharmacopoeia, 1972; Hakim, 1969; El-Mofty, 1948; Pahmy and Abu-Shady, 1948; El-Mofty 1952) [14, 23, 15, 17, 16]. It is used as an emmenagogue to regulate menstruation, as a diuretic, and for the treatment of leprosy, kidney stones, and urinary tract infections (Farnsworth, 2001) [12]. *A. majus* fruit and *Trigonela foenum-graecum* seeds are commonly used for a variety of kidney disorders and as diuretics (Al-Antaki, 1923; Karim, 1885; Ageel *et al.*, 1987; Ahsan *et al.*, 1989) [5, 2, 3].

The seed is contraceptive, diuretic and tonic (Bown, 1995) [8]. An infusion is used to calm the digestive system, whilst it is also used in the treatment of asthma and angina (Chevallier, 1996). A decoction of the ground-up seed, eaten after intercourse, appears able to prevent implantation of the fertilized ovum in the uterus (Bown, 1995) [8]. This decoction is also used as a gargle in the treatment of toothache (Bown, 1995) [8].

The seed contains furanocoumarins (including bergapten), which stimulate pigment production in skin that is exposed to bright sunlight (Bown, 1995; Chevallier, 1996) [8, 9]. The plant is widely cultivated in India for these furanocoumarins which are used in the treatment of vitiligo (piebald skin) and psoriasis (Bown, 1995; Chevallier, 1996) [8, 9]. Preparations containing psoralen or other furocoumarins, plus sunlight have been used for thousands of years for vitiligo (Ivie 1987) [27].

The root is chewed to give protection from strong sunligh It contains 8-methoxypsoralen which stimulates producti of pigment in skin exposed to U.V. light. Caution is advise however, since it can cause side-effects (Natural Fo Institute, Wonder Crops, 1987) [40]. Other reports sugg

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VAPOUR PHASE DEHYDROGENATION OF CYCLOHEXANOL USING COPPER BASED CATALYST- OPTIMISING TEMPRATURE ANF BED HEIGHTS

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ABSTRACT:

This work examines the dehydrogenation of cyclohexanol in vapour phase over copper based catalyst. The effect of support of promoter's e.g. rare earth oxides of metals like Thorium, Cerium, Aluminum and Uranium and other heavy metals were studied. The impregnation method was preferred for the preparation of these catalyst on pumice stone. The effect of reaction temperature, bed heights, feed flow rate were considered to maximize conversion and minimize side reactions. The reaction was best carried out at 225°c to 300°c.

Keywords: Vapour phase, dehydrogenation, heavy earth metals, impregnation, flow rate and bed heights.

INTRODUCTION:

Cyclohexanone is a colourlesss mobile liquid with an odour suggestive of peppermint and acetone; chiefly used as an intermediate also as a solvent for resins, laquers and dyes. Bolvcault, first prepared cyclohexanone by the dehydrogenation method. Further, dehydrogenation of cyclohexanone to phenol has also been reported. To prevent further side reaction, catalyst composition, temperature was optimized and side products were practically prevented and eliminated.

Fixed bed of catalyst were proposed and preferred over fluidized bed to insure regular flow pattern with favorable velocities. Various types of catalysts were prepared by impregnation method on pumice stones, silica gel, having different mesh pore sizes. The activity and selectivity of all the catalysts were studied and the catalyst finally selected copper-ceria oxide, catalyst having – 40 + 60 mesh pore size on pumice stone, with a bed height of L/D = 2 obtaining maximum conversion of cyclohexanol to cyclohexanone as the product; with temperature ranging from 225°c - 300°c.

MATERIAL & METHODS:

1. Procedure :

A flow diagram of the apparatus is shown in fig. 1, The reactor consisted of a 30 mm inside diameter. Pyrex glass tube heated to the reaction temperature by means of kanthal wire, well insulated from the outside to prevent heat loss. The pre heater was connect to the bottom of the reactor through the standard glass joint. In between the reactor and preheater there is a distributor pack with porcelain pieces of – 40 + 60 mesh pore sizes. The catalyst supported by a stainless steel wire gauge which was fixed to the top of the standard glass joint. On the top of the reactor, there is separator which is connected to the series of condensers as shown in fig 1. through the condensers, ice cold water was circulated. The receivers in which the product

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DEGRADATION KINETICS OF P-AMINOBENZOIC ACID BY PEROXIDATION, PHOTO-PEROXIDATION AND PHOTOFENTON PROCESSES

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Communicated: 15.02.21 Revision: 16.03.21 & 19.04.2021 Accepted: 10.05.2021 Published: 30.05.2021

ABSTRACT:
In the present work p-amino benzoic acid in its aqueous solution was treated by peroxidation (H_2O_2), photo peroxidation (UV/H_2O_2) and photofenton ($UV/Fe^{2+}/H_2O_2$) processes. The experiments were carried out in a batch photoreactor using 8W low pressure mercury vapor lamp to examine the effects of different concentrations and their degradation rates are compared. Substrate concentration was fixed by using UV-Visible spectrophotometer. The results indicated that the rate of degradation follows the following sequence; photofenton > photoperoxidation > peroxidation. The photo degradation processes were adhered to first order dynamics.

Keywords: *p-amino benzoic acid, peroxidation, photo-peroxidation, photofenton, first order dynamics.*

INTRODUCTION:

The pharmaceutical personal care products (PPCP's) are distinguished as a class of emerging contaminants of concern as very little is known about these contaminants' impact on the environment when released back into the ecosystem.

n recent years pharmaceutical, personal care roducts (PPCP's) production has risen xponentially. Lotions, pharmaceutical drugs, eterinary products and sunscreen products are ncluded in PPCP's[1-4]. These PPCP's should have n active element that can be organic or inorganic nature. Because of the overconsumption 'CP's usually are found in wastewaters. Organic tive ingredients have a chromophore sponsible for the absorption of sun radiation; ese include benzophenone-3, octocrylene and aminobenzoic acid (PABA). PABA was widely ed in the 70's as a sun protection agent but in e 80's a group of researchers discovered that BA was a disrupting agent against DNA cells.

With technology advances new remediation techniques have been explored and developed. Traditional remediation processes have demonstrated to be good with some organic pollutants but not enough with persistent organic pollutants such as those present in PPCP's. Some of the new developed technologies are the Advanced Oxidation Processes (AOP's)[5-10]. AOP's are carried out using a catalyst (semiconductor) with a wide band gap. OH radicals are generated in the presence of radiation and an oxidation agent, mediated by electron-hole pairs. The hydroxyl radicals are very reactive species and helps in the decomposition organic substances. One of the AOP's widely studied is the photofenton process which has been demonstrated to be a successful technique in the degradation of phenol, benzoic acid, organic dyes and other emerging contaminants[11-14].

In this research we have used peroxidation, photoperoxidation and photofenton processes to

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2 Papers
20 (1)

MOLECULAR INTERACTIONS OF DIMETHYLSULFOXIDE WITH CHLOROBENZENE, BROMOBENZENE AND NITROBENZENE BY EVALUATION OF EXCESS ACOUSTICAL PARAMETERS AT 313K TEMPERATURES

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Communicated: 23.02.21 Revision :22.03.21 & 27.04.2021 Accepted: 23.05.2021 Published: 30.05.2021

ABSTRACT:
Ultrasonic velocity (U), density (ρ) and viscosity (η) have been measured for binary mixtures of Dimethylsulfoxide with Chlorobenzene, Bromobenzene and Nitrobenzene at 313 K temperatures. The experimental data have been used to evaluate acoustical parameters such as adiabatic compressibility (β), free length (L_f), acoustic impedance (Z) and molar volume (Vm). Excess values of above parameters have been also evaluated, excess molar volume (V_m^E), excess intermolecular free length (L_f^E), excess adiabatic compressibility (β^E) and excess acoustic impedance (Z^E) at each temperature. These values are useful to understand molecular interactions of binary liquid mixtures.

Keywords: *Excess acoustical Parameters, Acoustical properties, Molecular Interactions, Ultrasonic Technique.*

INTRODUCTION:

Molecular interactions play an important role in understanding the structures and properties of liquids. The molecular interaction study from the variation of acoustical parameters and their excess values with composition gives insight into the molecular process. In recent years, the theoretical and experimental investigations of excess and deviation functions are taken as interaction parameters to improve the results. This work is concerned to the systematic study of molecular interactions in the binary mixtures, which are important in many fields of industrial and biological processes. Mixed solvents find practical applications as they provide wide range of mixtures with desired properties.

In present work acoustical parameters of binary liquid mixtures of Dimethylsulfoxide with Chlorobenzene, Bromobenzene and Nitrobenzene are calculated at 313 K temperatures as a function of composition. A complete knowledge of thermodynamic and transport properties of these industrially imported mixtures are often required for their industrial applications. From the practical point of view the mixtures investigated are especially important because they are widely used as solvents for dyes, coloring raw materials in plastic industry used to make synthetic fibers and for aircraft and vehicles.

Experimental

All the chemicals were AR grade; purities of these chemicals were checked by density determination at 313 K which showed an accuracy of 0.0001 gm cm^{-3} as compared to reported values. Binary liquid mixtures were prepared in measuring flask. The density, viscosity and velocity were measured as a function of composition of binary liquid mixture at 293-313 K. The density of sample was

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20. Molecular Interactions of Dioxane with Chlorobenzene, Bromobenzene and Nitrobenzene by Evaluation of Excess Acoustical Parameters at 313K Temperatures

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Abstract

Ultrasonic velocity (U), density (ρ) and viscosity (η) have been measured for binary mixtures of Dioxane with Chlorobenzene, Bromobenzene and Nitrobenzene at 313 K temperatures. The experimental data have been used to evaluate acoustical parameters such as adiabatic compressibility (β), free length (L_f), acoustic impedance (Z) and molar volume (Vm). Excess values of above parameters have been also evaluated, excess molar volume (V_m^E), excess intermolecular free length (L_f^E), excess adiabatic compressibility (β^E) and excess acoustic impedance (Z^E) at each temperature. These values are useful to understand molecular interactions of binary liquid mixtures.

Keywords: Excess acoustical Parameters, Acoustical properties, Molecular Interactions, Ultrasonic Technique.

Introduction

Molecular interactions play an important role in understanding the structures and properties of liquids. The molecular interaction study from the variation of acoustical parameters and their excess values with composition gives insight into the molecular process. In recent years, the theoretical and experimental investigations of excess and deviation functions are taken as interaction parameters to improve the results[1]. This work is concerned to the systematic study of molecular interactions in the binary mixtures, which are important in many fields of industrial and biological processes. Mixed solvents find practical applications as they provide wide range of mixtures with desired properties[2].

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STUDIES ON PRELIMINARY PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL ACTIVITY OF ROOT OF ACONITUM FEROX WALL (VATSANABH)

Mangesh B. Thakre[1], Akshay N. Patil[2], Nilesh Gandhare[2], Sudhanshu Kharkate[1], Sandeep Hate[1],Priya Thakre[1], Rakesh Naktode[1].
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ABSTRACT:
The medicinal plant Aconitum ferox wall from Katol region district Nagpur (MS) India was collected. The shade dried roots of Aconitum ferox wall was grind well into fine powder in mixture grinder. The powdered plant material was extracted using soxhlet apparatus with organic solvents like ethanol, chloroform, ethyl acetate, methyl acetate, acetone etc. Phytochemical screening of this plants was performed for Alkaloids, Glycosides, Phenol, Terpenoid, Phlobatanins, Anthraqinone, Flavonoids, Tannin, Saponins, Steroids and carbohydrate. In Vitro antimicrobial and antifungal activities were examined for alcohol extracts. Antibacterial were of plant part extracts against six pathogenic bacteria and one pathogenic fungi were investigated by the paper disc diffusion method by using Mueller-Hinton medium.

Keywords: Medicinal plants, Phytochemical, Antimicrobial activity, Antifungal activity.

INTRODUCTION:

All over the world plants were used as main sources of medicine by human kind. The rise of modern western medicine was initially accompanied by a decline in the practice of herbalism in all cultures and we started believing that synthetic chemical were the best medicines to treat illness and cure disease [1]. Medicinal plants are called medicinal herbs, have been discovered and used in traditional medicinal practices since prehistoric times. All plants synthesis hundreds of chemical compounds for function including defense against insects, fungi, diseases and herbivorous mammals. All plants produce chemical compound which given them an evolutionary advantage such as defending against herbivores. These phytochemicals have potential for use as drugs and the content and known pharmacological activity of these substances in the medicinal plants in the scientific basis for their use in modern medicine if scientifically confirmed [2]. Phytochemicals are primary and secondary compounds. Chlorophyll, proteins and common sugars are included in primary constituents and secondary compounds have terpenoid, alkaloids and phenolic compounds. Terpenoids exhibit various important pharmacological activities i.e., anti-inflammatory, anticancer, anti-malarial, inhibition of cholesterol synthesis, anti-viral and anti-bacterial activities. Terpenoids are very important in attracting useful mites and consume the herbivorous insects. Alkaloids are used as anesthetic agents and are found in medicinal plants [3].The Aconitum is genus of over 250 species of flowering plants belonging to the family Ranuculaceae. These herbaceous perennial plants are chiefly native to the mountainous parts of northern hemisphere [4].*Aconitum ferox* is a member of monkshood genus Aconitum of Ranunculaceae. *Aconitum Ferox* is also called as

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Keywords: Medicinal plants, Phytochemical, Antimicrobial activity, Antifungal activity.

INTRODUCTION:

All over the world plants were used as main sources of medicine by human kind. The rise of modern western medicine was initially accompanied by a decline in the practice of herbalism in all cultures and we started believing that synthetic chemical were the best medicines to treat illness and cure disease [1]. Medicinal plants are called medicinal herbs, have been discovered and used in traditional medicinal practices since prehistoric times. All plants synthesis hundreds of chemical compounds for function including defense against insects, fungi, diseases and herbivorous mammals. All plants produce chemical compound which given them an evolutionary advantage such as defending against herbivores. These phytochemicals have potential for use as drugs and the content and known pharmacological activity of these substances in the medicinal plants in the scientific basis for their use in modern medicine if scientifically confirmed [2]. Phytochemicals are primary and secondary compounds. Chlorophyll, proteins and common sugars are included in primary constituents and secondary compounds have terpenoid, alkaloids and phenolic compounds. Terpenoids exhibit various important pharmacological activities i.e., anti-inflammatory, anticancer, anti-malarial, inhibition of cholesterol synthesis, anti-viral and anti-bacterial activities. Terpenoids are very important in attracting useful mites and consume the herbivorous insects. Alkaloids are used as anesthetic agents and are found in medicinal plants [3].The Aconitum is genus of over 250 species of flowering plants belonging to the family Ranuculaceae. These herbaceous perennial plants are chiefly native to the mountainous parts of northern hemisphere [4].*Aconitum ferox* is a member of monkshood genus Aconitum of Rananculaceae. *Aconitum Ferox* is also called as

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STUDIES ON PRELIMINARY PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL ACTIVITY OF ROOT OF ACONITUM FEROX WALL (VATSANABH)

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ABSTRACT:

The medicinal plant Aconitum ferox wall from Katol region district Nagpur (MS) India was collected. The shade dried roots of Aconitum ferox wall was grind well into fine powder in mixture grinder. The powdered plant material was extracted using soxhlet apparatus with organic solvents like ethanol, chloroform, ethyl acetate, methyl acetate, acetone etc. Phytochemical screening of this plants was performed for Alkaloids, Glycosides, Phenol, Terpenoid, Phlobatanins, Anthraqinone, Flavonoids, Tannin, Saponins, Steroids and carbohydrate. In Vitro antimicrobial and antifungal activities were examined for alcohol extracts. Antibacterial were of plant part extracts against six pathogenic bacteria and one pathogenic fungi were investigated by the paper disc diffusion method by using Mueller-Hinton medium.

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Research Article

Synthesis and Transport Properties of Polyaniline-Nickel Sulfide Nanocomposite

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Abstract: Intercalation of transition metal salts into polyaniline matrix significantly transformed their optical and electronic properties to greater extent. Interactions of nickel sulfide into polyaniline matrix were synthesized by simplest route via oxidation method. Effect of nickel sulfide nanoparticles on the electrical properties of polyaniline was studied. Product were characterized through FT-IR, NMR and TEM spectroscopy. It has been also observed that successful incorporation of nickel sulfide into the polymer matrix along with a strong interaction between the nickel sulfide and polyaniline matrix. Electrical conductivity was enhanced significantly analogues to semiconducting materials, which could be used in variety of electronic devices.

Keywords: *Polyaniline; Nickel sulfide; nanocomposites, transport properties.*

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1. INTRODUCTION

In the present context, there are worldwide growing interest on conducting polymer-metal composites.[1] Environmental stability and appreciable electrical conductivity of polyaniline imparts it's wide applications in electronic sectors.[2-4] However intercalation of transition metal nanoparticles in polyaniline matrices enhances their electronic properties to the greater extent.[5-7] Several researchers have reported the synthesis of polyaniline nanocomposites with inorganic metals such as silver[8], nickel

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Little rip phenomena from coupled dark energy with quadratic equation of state with time-dependent parameters

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Abstract. The purpose of this article was to examine the behavior of the Little rip (LR) and Pseudo rip (PR) models with two interacting ideal fluids related to dark energy and dark matter with the quadratic equation of state with time-dependent parameters $\omega(t)$ and $\Lambda(t)$ in flat Friedmann–Lemaitre–Robertson–Walker cosmological model. In this article, the gravitational equations of motion for dark matter have been solved. The equation of the state parameter $\omega(t) \to -1$ has been discovered. Also, discovered $\Lambda(t) \to \infty$ as $t \to \infty$, it shows that the future behavior of our universe depends on specific model parameters $\omega(t)$ and $\Lambda(t)$ for the coupled dark energy. In this formalism, the properties of the early universe are pointed out.

Keywords. Cosmology models—Dark energy—Dark matter—Little rip (LR)—Pseudo rip (PR)—Quadratic equation of state (EOS).

Introduction

ıe of the most unforeseen disclosures about our derstanding of the universe is that it is not ninated by the ordinary baryonic matter, but ead, by a form of nonluminous matter called matter and is about five times more abundant baryonic matter (Ade *et al.* 2014). The method xplaining the observed expansion is to intro- a dark energy fluid with negative pressure and ve entropy for the universe that derives the ely accelerated phase of the universe expan- iess *et al.* 1998; Perlmutter *et al.* 1999; Sahni obinsky 2000; Peebles & Ratra 2003; Li *et al.* According to present observational data, dark currently accounts for about 73% of the total rgy of the universe and only 27% of a ion of dark matter and baryonic matter i *et al.* 2008).

tle has been explored about dark energy and ies that determine the fate of our universe. to that, there is no clear evidence that they h each other or even they are interlinked usually believed that they weakly interact ry matter. However, there is a enough possibility to develop a generalized model of quintessence field that the background and the dark energy develop independently, but have nonminimal coupling between both dark components (Amendola 2000; Chimento *et al.* 2000; Zimdahl *et al.* 2001; Amendola & Tochini 2002; Chimento *et al.* 2003a,b; Gonzalez *et al.* 2006; Farooq *et al.* 2011). Since the nature of the dark matter is not completely discovered, we have the liberty to consider additional interactions between the dark components without bothering about the facts observed so far. Nevertheless, solar system tests impose some restrictions on the nonminimal coupling between dark matter and dark energy (Will 1933). Currently, no specific coupling between the dark sectors has been known based on fundamental theories. Therefore, suggested coupling models will necessarily be phenomenological (Amendola & Tocchini-Valentini 2001; Boehmer *et al.* 2008), though some models seem to have more physical justification than others (Gonzalez *et al.* 2006; Boehmer *et al.* 2015; Gleyzes *et al.* 2015; D'Amico *et al.* 2016; Pan *et al.* 2020a,b).

Here, new interaction can be phenomenologically introduced in several ways (Koyama *et al.* 2009) in the investigation, which follows similar approaches

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COVID-19 IMPACTS ON THE INDIAN ECONOMY

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ABSTRACT

The Covid-19 is the foremost human disaster in the year 2020. The WHO has declared Coronavirus a pandemic, as more than 200 countries and territories have confirmed medical cases of coronavirus. The outbreak of the Covid-19 pandemic has created tremendous shock to the Indian economy. As India being developing economy, it was already in a struggling state before Covid-19. The unexpected countrywide lockdown in India was the biggest in the world, as it forced 1.3 billion Indians to stay indoors. During the lockdown period, except for several essential services, the rest of India's $2.9 trillion economy was stayed closed. With the prolonged lockdown in India, global economic recession and disturbance of demand and supply chains, the economy has been very likely to face a long-drawn-out phase of slowdown. It had also slowed down the supply-side, accelerated the slowdown further and put at risk the economic well being of millions. The impact of the COVID-19 pandemic on the India economy has been very alarming. India faces an enormous decline in government revenues and growth of the income for a minimum of two quarters because the coronavirus hits economic activity of the country as a whole. The GDP's three major contributors: private consumption, investment and external trade have also been affected. India's GDP growth slow-down to its lowest in over six years in 3Q 2019-20, and the outbreak of the COVID-19 posed fresh challenges. India's growth for next year 2020-21 is forecasted in between, about 5.3% to 5.7%. According to the Ministry of Statistics, India's growth went down by 3.1%, in the 4Q of the 2020 fiscal year. This study aims to assess the COVID-19 impacts on the Indian Economy. The study also attempts to provide the remedies to improve the growth of the economy. The complete research study and findings are based on the objectives.

Keywords: COVID-19, Pandemic, Indian Economy, Recession.

INTRODUCTION

The Covid-19 is the foremost human disaster in the year 2020. Coronavirus has been declared a pandemic by the WHO, as more than 200 countries and territories have confirmed medical cases of coronavirus. The Indian Government took tough protective measures for curbing the spread of this virus by restricting the movement; however the virus caused chaos in the country. The corona virus killed many peoples, including those peoples who were fighting the battle against corona to safeguard the life of others. As India is developing economy, it was already in a struggling state before Covid-19. The unexpected countrywide lockdown in India was the biggest in the world, as it forced 1.3 billion Indians to stay indoors. The four stages of continual countrywide lockdown spanning above two months have a significant impact on the

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IMPACT OF COVID-19 ON THE INDIAN TOURISM INDUSTRY

Dr. Amit S Nanwani*

ABSTRACT

The Covid-19 pandemic is the foremost human disaster in the year 2020 and has created tremendous shock to the Indian economy. The Covid-19 pandemic has affected severely to the various important sectors of India economy. The impact of Covid-19 on the Tourism Industry which is one of the important sectors has been extremely disturbing and has caused great losses. As India being developing economy, it was already in a struggling state before Covid-19. The unexpected countrywide lockdown in India was the biggest in the world. And the four stages of continual countrywide lockdown spanning above two months have a significant impact on the tourism industry in India. During 2019, the Indian travel & tourism sector accounted 6.8% of India's GDP and created 39,821 million jobs, which is around 8.0% of the total employment. The Indian tourism and hospitality industry is now assuming a probable job loss of around 38 million. The Indian government has undertaken major initiatives to get the tourism sector back on track. The Indian travel and tourism industry has begun to develop general safety and hygiene standards for hosting and serving their customers; and trying to build confidence of people to travel again after the corona pandemic. This study aims to assess the Covid-19 impacts on the Indian Tourism Industry. The study also attempts to provide the remedies to recover and improve the growth of the tourism sector in India. The entire research study and findings are based on the objectives.

Keywords: *Covid-19, Pandemic, Indian Tourism Industry, Recession.*

Introduction

Coronavirus has been declared a pandemic by the WHO, as more than 200 countries and territories have confirmed medical cases of coronavirus. The Covid-19 pandemic is the foremost human disaster in the year 2020 and has created tremendous shock to the Indian economy. The Covid-19 pandemic has affected severely to the various important sectors of India economy. The impact of Covid-19 on the Tourism Industry which is one of the important sectors has been extremely disturbing and has caused great losses. The Indian Government took tough protective measures for curbing the spread of this virus by restricting the movement; however, the virus caused chaos in the country. As India being developing economy, it was already in a struggling state before Covid-19. The unexpected countrywide lockdown in India was the biggest in the world. As it forced 1.3 billion Indians to stay indoors. And the four stages of continual countrywide lockdown spanning above two months have a significant impact on the tourism industry in India. During 2019, the Indian travel & tourism sector accounted 6.8% of India's GDP and created 39,821 million jobs, which is around 8.0% of the total employment. The Indian tourism industry is assuming a likely job loss of around 38 million. India faces an enormous decline in government revenues and growth of the income for a minimum of two quarters because the coronavirus hits economic activity of the country as a whole. In the view of the entire these reasons; there is a need of

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Role and Importance of Data Validation and Verification (DVV) in NAAC Accreditation Process

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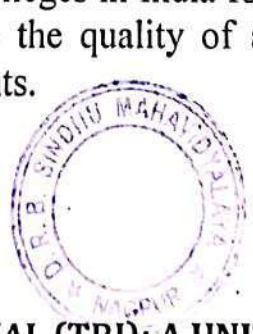
Abstract - In the developing country like India, education plays a very important role in the growth and development of a nation. And higher education is a great mechanism for disseminating knowledge and information based society. In this current scenario of globalization, the key priority is to boost up higher education, as the scope and demand for higher education is increasing the manifold. To meet the ever changing requirements of worldwide it becomes essential to ensure that the education meets satisfactory levels and the utmost concern taken for providing higher education with no compromise on its quality. Hence, it becomes essential to assess and accredit higher education institutions as the outcome need for accreditation arises. For maintaining the quality of higher education in universities, affiliated colleges and institutes, Central Government of India established National Assessment and Accreditation Council (NAAC) in the year 1994 on the recommendations of the National Policy in Education. And, this granted autonomy to such body to take essential steps for improving the quality of Higher education. NAAC does assessment and evaluate the quality of a university or a college on prescribed standards and complies with the minimum requirements. Mainly there are four important steps on which the entire NAAC Accreditation process is done and DVV is a very important step under this process. As the peer team visit is done after successful completion of DVV step. The present study aims to assess the role and importance of DVV in NAAC accreditation process. The study also overview the process of NAAC accreditation. The present research study is based on the objectives.

Keywords: NAAC, HEIs, Accreditation, DVV.

I. INTRODUCTION

this current scenario of globalization, the key priority is to boost up higher education, as the scope and mand for higher education is increasing the manifold. For the promotion of global standards in HEIs, nting world class education has become the foremost mission of the HEIs for the creation of intellects. ce, it becomes essential to assess and accredit higher education institutions as the outcome need for editation arises. The chief goal of accreditation is to certify that education provided by HEIs meets factory levels of quality and create institutions of the future. For maintaining the quality of higher ation in universities, affiliated colleges and institutes, Central Government of India established National ssment and Accreditation Council (NAAC) in the year 1994 on the recommendations of the National y in Education. And, this granted autonomy to such body to take essential steps for improving the quality gher education. NAAC (National Assessment and Accreditation Council) is an autonomous institution UGC (University Grants Commission) of India. It has been entrusted with the responsibility of ment and Accreditation of Universities and Colleges in India for promoting quality of teaching-learning search. NAAC does assessment and evaluate the quality of a university or a college on prescribed ds and complies with the minimum requirements.



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A STUDY OF COVID-19 : IMPACT ON ONLINE BUYING BEHAVIOUR OF CONSUMERS IN NAGPUR CITY DURING THE PERIOD OF MARCH, APRIL & MAY 2020

Dr. Bhavna Choudhary
Assistant Professor
Dada RamchandBakhru Sindhu
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Abstract: *This paper attempts to investigate the impacts of COVID-19 on online buying behaviour of consumers in Nagpur City during the period of 3 months i.e. March, April and May 2020. In order to control and stop the spread of the deadly corona virus in the city, government had to impose strict rules for lock downs i.e. forced shutting down of the shops around the city for quite a few months. Due to this, consumers were not able to acquire goods easily which could have been done otherwise. After government declared the lockdown, the daily alerts, warnings and news from various television channels and social media had a drastic effect on the behaviour of people. A common man started having a fear and insecurity in his mind. As a result, in order to stay safe, people readily accepted the rules of social distancing as a way to help slowdown the spread of the pandemic. This certainly contributed to an increase in online shopping as people have made a turn to e commerce to purchase the items they might have otherwise purchased in person.In order to stay safe from the deadly virus, many consumers preferred to stay at home and switched over from physical shops, supermarkets, and shopping malls to online portals and shopping sites for the purchase of all kinds of products, ranging from basic commodities to branded goods.*

There are multiple benefits that are associated with e-commerce such as ease in selection, and convenience. Companies are dealing 24/7 due to online services so consumers can buy anything, anytime, anywhere by staying indoors. Selection of products has also become easier such as customers can choose any product from a wide variety. It allows consumers to exchange services and goods electronically with no barrier of distance or time. According to many studies, e-commerce industry is now growing in a remarkable way due to the use of sophisticated electronic devices. E-commerce has given many options to customers so they can buy goods online and save their plenty of time. There are numerous reviews about products and services so customers can easily compare and choose a product that seems best.

Keywords: *Covid-19 pandemic, E-commerce, consumer behaviour, social distancing, lockdowns, human curfew.*

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Introduction:

Corona virus came into notice on December12 in Wuhan city of China, and it was found out that people are infected very seriously by this deadly disease. Within a week, millions of people got infected with this virus in China. Furthermore, at present, 205

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

Dr Anushree Mahajan
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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 991 emergency and from that point forward, FDI as consistently expanded in the nation. India, day 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.

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Spirituality in Business Leadership: Need of the Day

Dr. Anushree Mahajan

D R B Sindhu Mahavidyalaya, Nagpur, Maharashtra, India

STRACT

irituality has starting late been taking over as a response for a couple of essure issues found in business and for beating growing business issue hich is seen by corporate bosses with wants for it to be a reaction to piling roubles in breaking down affiliations. Spirituality and its relationship to orkplace activity is a persuading issue for the board specialists and trained rofessionals. The field of study is as yet in its beginning phases and verything considered is separate by contrasts in definitions and other basic attributes. The objective behind this examination is to separate known academic articles for how they depict Spirituality in workplace, explore the nexus among Spirituality and organization, and discover essential factors and conditions for propelling a theory of significant power and stress the oteworthiness of Spirituality in business activity inside the setting of the orkplace.

KEYWORD: *Spirituality, corporate, leadership, working environment*

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INTRODUCTION

Business is a substance we have known over ages that focuses at benefit making just as enhancement of the same. Despite the fact that Spirituality is a wonder that supports us rising above the materialistic needs. So would we have the option to express that Spirituality and productivity are on a very basic level random?

The fitting reaction is, NO, they are certainly not. As emonstrated by a creating gathering of exploration, bringing Spirituality regards into the workplace can incite extended productivity and advantage similarly as agent support, customer trustworthiness, and brand reputation.

Over the globe, people are by and by expecting to bring a nore noticeable sensation of noteworthiness and reason nto their work life. They need their work to mirror their wn basic purpose for existing . Various affiliations are iscovering approaches to acquire an arrangement the uthoritative objectives, vision and mission with a higher eason and more profound obligation to serve the two ients just as workers.

ıe standard customer driven affiliations are changing into presentative driven relationship with the conviction that ppy and satisfied workers will themselves expect the ligation of keeping the clients glad. In this manner owing the arrangements. What's more, the second one ıtemplates the satisfaction of the life need of rituality gets planted in the point of view.

ore a meaning of Spirituality in authority can be given, word reference meaning of soul is "what is customarily accepted to be the crucial rule or energizing power inside living creatures." Thus, the soul identifies with the more profound sense, which means, or centrality of something. A word reference meaning of the pioneer is "one who shows the path by going ahead of time; one who makes others follow some game-plan or line of thought." Thus, the pioneer is one who impacts devotees to think or act here and there.

Spirituality is the way toward arousing from standard cognizance, transcending the personality and arousing to a more extensive awareness. It can mean extending the brain past constraints, contemplations, and restricted perspectives about existence and the Universe. Spirituality can likewise mean the way toward making the brain liberated from fears, stresses and constant reasoning, and encountering internal harmony and euphoria in one's regular day to day existence

Joining the two terms suggest that the pioneer who wire Spirituality into their authority will be one who make others search out and fathom their inward personalities an who develops a sensation of significance and importanc among their allies. Thusly, one significance of Spirituality initiative is a widely inclusive approach to mana administration wherein the pioneer tries to enable sensation of tremendousness and interconnectedness amo representatives.

IMPORTANCE OF SPIRITUALITY IN BUSINESS:

Requirement for innovativeness in work changed

Addition in the interest to extend bits of the pie, clea

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Translation: An Act Of Creativity

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Abstract : *Translation is one of the most creative activities. Generally it is believed that the translator has no freedom of creativity or thought as he has to confine himself to the text of the original author. It is believed that the translator has no right to bring about any kind of changes in the contents of the original text. He has no freedom to change the meaning or purpose of the text. He has to commit himself to literally recording the original's ideology from language which has got its own assets of culture and tradition as well as social norms into another different language. He is considered a slave to the original text. So the question asked under such circumstances is that where is the scope for creativity. However such a view does not hold good simply because unless a translator has an inner urge of creating something new in the language apart from the language of the original text and unless he applies his own mind, the translation would never see the light of the day. That inner urge and instinct of creating something new in a different language and keeping the faithfulness is an art of creativity. Creating something new in a given framework using the mindset of somebody else needs more creativity than what is required for creating an original piece of art. So translation and creativity are deeply related to each other. This paper is an attempt to explore how translation is an act of creativity.*

Key Words: subjection, content, subtleties, substituting permutation

1. INTRODUCTION

The manifestation of creativity is the long-long history as recorded by archaeologists. Many cultural concepts have taken a remarkable shape in various societies of the world at different times. The meaning of creativity must have undergone a sea change through the pages of history with the passage of time. The ancient Greek concept of art, with the exception of poetry, involved the subjection to rules rather than freedom of action. In Rome, the Greek concept was a little different and visual artists were viewed as sharing with poet's imagination and inspiration. Medieval Christianity believed God's act of creation ex nihilo and designated it as creation. The people of this age believed in the divine creativity of its creator. They did not consider any activity of human beings as creative. But with the passage of time man started understanding how to exploit nature for his use. By utilising the already existing resources of Mother Nature, man initiated the process of germination of the seed of creativity. Passing through the ages this seed of creativity has now penetrated with its deep roots and bloomed into a huge tree with its branches spread throughout. Creativity keeps on blooming with new flowers and buds adding new dimensions to itself and bringing newness in the existing society all over the world. In the present context creativity refers to creating something new and valuable. As defined by wikipedia, "Creativity is an act of turning new

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EFFICACY OF SEM AND HEMATOLOGICAL RESPONSES OF FORMALIN-INACTIVATED POLYVALENT VACCINE FOR AEROMONAS INFECTION

Authored by

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EFFICACY OF SEM AND HEMATOLOGICAL RESPONSES OF FORMALIN-INACTIVATED POLYVALENT VACCINE FOR *AEROMONAS* INFECTION

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Abstract : *Aeromonas* infection is caused by the Gram-negative bacterium *Aeromonas hydrophila* sp responsible for significant economic losses fresh water aquaculture in India and worldwide. The diversity of *A hydrophila* isolates and the inherent difficulties in vaccinating *Clarias batrachus*(walking catfish) has hampered the development of a formalin-inactivated polyvalent vaccine for *Aeromonas* infection. At present no commercial vaccines are available approved for *Aeromonas* infection in the India, using antibiotics as the only course of action to control disease outbreaks. The current work was performed as a pilot study to assess the efficacy of a polyvalent, whole cell vaccine containing formalin-inactivated *Aeromonas hydrophila sp*., to induce protective immunity in *Clarias batrachus*(walking catfish).In present study Relative Percent Survival (RPS) and Analysis of Variance (ANOVA) were used to analyze the results from the primary data and to determine the statistical differences in mortality and survival between vaccinated groups and unvaccinated group. SEM, Histopathological studies and hematological parameters eanalysis of vaccinated and control fish via IP route have been carried out.

Key words: *Aeromonas* sp., Fish Vaccine, LD 50, SEM, vidarbha

Introduction: The global demand for safe food has prompted the search for natural alternative growth promoters to be used in aquatic feeds while disease outbreaks are being increasingly recognized as a significant constraint on aquaculture production and trade, affecting the economic development of the sector in many countries and has been suffered enormous losses due to trans-boundary diseases and increasing risks are expected in future as aquaculture expands leading to increased movement of seed and bloodstocks across national and international boundaries. The condition of healthy and unhealthy fish varies and depends upon bio-physical and environmental conditions. Healthy fishes generally have clean body, erected fins, bright body colour, faster movement, if frightened and fins and skin remain in intact condition. While unhealthy fish show irregular swimming movement, jumping, rubbing of the body against any rough substrate, surfacing on water, gasping air, refusal of feed and excessive mucus secretion on the body surface, eyes sunken, blackish body colour, etc. Abdominal swelling or cyst formation also indicates some internal disorder of fish (Kalita, 2006). Intensification of aquaculture has led to major problems in outbreaks of fish diseases. High stocking density, excess feeding and artificial fertilization are common husbandry practices followed in carp culture system. These offer an ideal environmental condition for the growth of different types fish pathogens as a result the host organism (fish) suffer from stress. The occurrence of *Aeromonas* spp. is not well documented in Vidharbha region, only few researcher were reported about *Aeromonas* spp. infection and other bacterial diseases in aqua culture polluted water (Shanware, 2001).

Hematological studies on fish have assumed greater significance due to the increasing emphasis on pisciculture and greater awareness of the pollution of natural freshwater resources in the tropics. Such studies have generally been used as an effective and sensitive index to monitor physiological and pathological changes in fish (Iwama *et al*., 1976; Chekraharty and Banerjee, 1988). Significantly increased values of erythrocyte count, hemoglobin concentration, and hematocrit value in catfish (*Clarias garepinus*) at the 1st and 3rd days after administration of ciprofloxacin, amoxycillin and ampicillin (Faisal *et al*., 2003). Blood indices Mean corpuscular hemoglobin concentration (MCHC), Mean corpuscular volume (MCV), Mean

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Significance Of The Concept Knowledge Management

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Abstract

Over last few years there have being lots of discussion on importance of knowledge management within our society. The management of knowledge is significant as an important factor for institutional survival and maintenance of competitive strength. The word Knowledge Management (KM) has grown remarkably during the past decade. Knowledge management creates awareness among employees of institution and organizations in achieving their aims and objectives. To maintain at the forefront organizations/institutions need a good capacity to retain, develop, organize and utilize their employees' capabilities. " Knowledge' " is at centre stage (Davenport et al., 1998). KM is a necessary components for organizations to maintain their competitive keenness.

Keywords: Knowledge, Knowledge Management, competitive keenness and competitive strength.

Introduction:

Knowledge should be manage in an appropriate way since it is the key resource of competitive strength. In recent years, knowledge management has been recognized as a key component for effective functioning and performances of institution and organization(Zack, M.H.; McKeen, etal 2009 and Donate, M.J.;2011).The significance of the concept of knowledge management is growing, taking into account the processes of globalization and the rate of technological change(Mehta, N.2008).

Knowledge management involves converting individual knowledge into collective, organizational knowledge. Knowledge management, influence the activities like: getting, using, learning, contributing, assessing, sustaining, building, and divesting knowledge (Bukowitz, W.R.; Williams, R.L.1999). In other words, the goal is to define the dimensions of collaborative climate that appear to be adequate predictors in explaining knowledge management (Jokanović, B.2017), as well as to define the factors of collaborative climate that contribute to a higher-quality knowledge management. Knowledge Management System (KMS) has been observed in many organizations, where they use the system with real enthusiasm and interest.

According to Davenport and Prusak, ,knowledge is a set of values, experiences, information, which provides a framework for implementation and evaluation of new experiences(Jokanović, B.; Okanović,etal, 2018). A holder of knowledge may be an individual, group, or organizational routine. Knowledge is transferred through structured media (books and documents) and direct communication between employees in the organization.

Knowledge management is the knowledge entropy management. Knowledge sharing affects the distribution of knowledge within institution and organization, by providing access to employees to use existing knowledge. Knowledge sharing does not represent the creation of new knowledge, yet a diffusion process that increases the overall disorder of organizational knowledge. Thus, as a result of knowledge sharing, the state of organizational knowledge consequently has an increased level of disorder, that is,an increased level of knowledge entropy.

Knowledge meaning: "Knowledge is an understanding of someone or something, like information, facts, descriptions, or skills, which is acquired through experience or education by discovering, or learning. Knowledge can relate to theoretical or practical

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Trapping Parameters in $KMgSO_4F$:X (X = Cu, Dy and Eu)

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Abstract- $KMgSO_4F$: Cu, $KMgSO_4F$: Dy and $KMgSO_4F$: Eu material are synthesized by wet chemical method and studied for its trapping parameters such as geometrical factor (μ), Order of Kinetics (b), Trap depth (E) and frequency factor (s) associated with the isolated TL glow curve by Chen's half width method to get the information mechanism of trapping and recombination of charge carrier with the traps. Thermoluminescence (TL) glow curve of $KMgSO_4F$: Cu,Dy,Eu has been investigated in detail at various concentrations, between the temperatures range of 50 to 300 °C. All TL glow curves showed single peak at 197.76 °C, 172.91 °C and 180.26 °C respectively. The release of hole or electron from defect centers at the characteristic trap site indicates the luminescence process in this material.

1. INTRODUCTION

Most research of TL concentrates on the development of new phosphors exhibiting improved performance and on measuring set-ups [1]. CaF2 doped with rare earth impurity ions was extensively studied because of its high sensitivity and its ability to store the incident energy [2-3] which is suitable for radiation dosimetry. The material has been marketed as a commercial thermoluminescence (TL) dosimeter, CaF2:Dy, under the commercial name TLD-200. TL technique has a wide range of applications such as radiation detectors, solid-state dosimeters for industrial and medical radiation dosimetry applications, dating techniques in archaeology, geology and to study the variety of defect centers created by ionizing radiation [4-9]. Till date no material has been found to possess all features and thus a search in this area is in constant progress. The present work is also a small step taken forward in the same direction for a search of an ideal TL phosphor.

Sulfate based TL materials are synthesized and studied because of their well desired characteristics like a high temperature low peak, linear response with ionizing radiation exposure, negligible fading and an easy methods of preparation [10]. There are several thermoluminescent materials such as CaSO4: Eu,Ag, K2Ca2(SO4)3:Eu, KMgSO4Cl doped with Dy, Ce and Mn etc. of which almost all has been studied for improvement in the thermoluminescence characteristics and the trapping parameters [11–13]. Many researchers have investigated luminescence properties of mixed sulfate phosphors for their use as dosimeters of ionizing radiations [14–20]. In three-parameter model, TL is described by the three parameters namely activation energy (E), order of kinetics (b) and frequency factor (s). This work reports for the first time the TL response of the phosphors to gamma radiation in mixed halo-sulfate phosphor $KMgSO_4F$ doped with different concentration of the Copper, Dysprosium and Europium prepared by wet chemical method. The focus in this paper is mainly on studying the Trapping parameters such as geometrical factor (μ) hence order of kinetics (b), Trap depth (E) and frequency factor (s) all have been calculated by Chen's method for 5 Gy dose of ^{60}Co for heating rate of 5 °C .

According to a theoretical analysis of Thermoluminescence (TL) phenomenon done by Randall and Wilkins [21], electrons are trapped during thermal excitation at some lattice sites. When the crystal is heated, electrons are released into the conduction band and recombine with holes at the recombination sites, resulting in TL emission. In practice, phosphors have more than a single trap and a single recombination center, which results in a curve of TL. TL investigations have also shown that defect centres play a crucial role in TL analysis. The formation and the stability of the defect centres depend on the method of preparation of phosphors and the activators. TL strongly depends on the host material, the type of activator, radiation induced defect centre, dose and type of ionizing radiation. Dosimetric characteristics of TL materials are mainly depends on kinetic parameters. Kinetic parameters quantitatively describe the trapping-emitting centers responsible for the TL emission. Therefore, determination of the kinetic parameters is an active area of research for better understanding of TL process. There are various methods for evaluating the trapping parameters such as glow peak shape, various heating rates and initial rise method.

2. EXPERIMENTAL

$KMgSO_4F$ (pure) and $KMgSO_4F$:Cu phosphors were prepared by a wet chemical method. $MgSO_4$ and KF of AR grade were taken in a stoichimetric ratio and dissolved separately in double distilled de-ionized water, resulting in a solution of $KMgSO_4F$. Confirming that no undissolved constituents were left behind and all the salts had completely dissolved in water and thus reacted.

$$MgSO_4 + KF \rightarrow KMgSO_4F$$

Then water-soluble sulfate salt of Copper was added to the solution to obtain $KMgSO_4F$:Cu The compounds $KMgSO_4F$ (pur and $KMgSO_4F$: Cu in its powder form was obtained by evaporating on 80 °C for 8 hours. The powder was used in further stud The same procedure was adopted for $KMgSO_4F$: Dy and $KMgSO_4F$: Eu (in this case instead of copper the sulfate salt dysprosium or europium was used). Formation of [illegible] confirmed by taking the X-ray diffraction (XRD) [22].

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PL Characterization of Efficient $K_3Ca_2(SO_4)F$:X, Y (X=Ce and Y=Dy or Mn) by Co-Precipitation Method

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Abstract: In the present work, X-ray powder diffraction (XRD), Photoluminescence (PL) properties of co-doped $K_3Ca_2(SO_4)_3F:Ce^{3+},Dy^{3+}$ and $K_3Ca_2(SO_4)_3F:Ce^{3+},Mn^{2+}$ have been investigated and discussed at various concentrations of Ce, Dy and Ce, Mn. Investigated material has been synthesized by co-precipitation method. The energy transfer from Ce^{3+} to Dy^{3+} is discussed based on the excitation and emission spectra, which transfers energy. $K_3Ca_2(SO_4)_3F:Ce^{3+},Dy^{3+}$ have two peaks in PL emission spectra at 484nm and 576nm by UV excitation at 264nm

PL emission spectra of $K_3Ca_2(SO_4)_3F:Ce^{3+},Mn^{2+}$ is efficient for Ce^{3+}-Mn^{2+}energy transfer. The Mn^{2+} in this system can be effectively excited in a wide UV; it gives an intense emission peak at 585 nm and at 655nm after quenching the material. The phosphors in this system may be chosen as the orange or red component in the tri-colour system and can be applied in red-LEDs.

Index Terms–Co-precipitation, co-doped, Photoluminescence, Radiative.

I. INTRODUCTION

Light-emitting diodes (LEDs) have attracted much attention in recent years due to their advantages in luminous efficiency, reliability, energy-saving, maintenance, long lifetime, etc. [1]. The most commonly used approach to generate white light relies on the combination of blue LED with yellow phosphor (YAG:Ce^{3+}) [2]. However, this approach has several deficiencies [3], such as low colour rendering index because of the lack of sufficient red component, yellow- halo effect, as well as poor thermal stability. Therefore, their applications have been limited in some fields, e.g., architectural and medical lighting [4]. To overcome these deficiencies, a combination of UVLED with red-green-blue (RGB) phosphors has been suggested [5].

A new concept of energy transfer (ET) sensitization is developed, based on nearly resonant energy migration through a RE ion by a single-step transfer towards the emission centers created by Ce^{3+} or Dy^{3+}. Rare earths are especially suitable for energy transfer because of their well-defined and narrow electronic levels, to which absorption occurs and from which fluorescence is observed.

Transition metal ions generally have larger oscillator strengths than rare-earth ions and can therefore absorb more energy. Thus sensitized luminescence with high emission efficiency can be observed from luminescent matrix co-doped with transition metal ions. This sensitized luminescence is very important for the research and application of luminescent materials.

Mixed sulphates are also known to be good PL materials.CaF_2:Mn does not give any fluorescence under the UV excitation, while CaF_2:Ce gives a characteristic Ce^{3+} fluorescence emission with UV light excitation. The combination of Ce and Mn in the CaF_2 lattice [6],however, gives brilliant Mn^{2+} fluorescence emission in addition to that of Ce^{3+} on UV excitation, due to energy transfer from Ce^{3+} to Mn^{2+} ions. Similar enhancement in the fluorescence efficiency of Dy and Mn ions was reported in CaSO4:Ce,Dy and CaSO4:Ce,Mn [7]. However, the application of a similar energy transfer mechanism leads to enhanced sensitivity in the case of PL and thermoluminescence (TL) and during the course of investigation on TL in sulphate-based phosphors, many have reported several sulphate phosphors possessing properties useful to TL dosimetry of ionizing radiations [8-14].Recently Gedam et al have reported PL characterization of $KZnSO4Cl:Ce^{3+},Dy^{3+}$ and $KZnSO4Cl:Ce^{3+},Mn^{2+}$ halo-sulphate phosphors [15].

Energy transfer between pairs of rare earth ions at dilution levels below the self-quenching limits has been known to take place generally through multi-polar interactions like dipole–dipole interactions or dipole–quadrupole interactions [16]. Much work has been done on the energy transfer from Ce^{3+} to different activator ions in different host lattices [17-19].In the field of luminescence, scope of study of mixed halo-sulphate phosphor is wide open. Considering lot of scope to study new material $K_3Ca_2(SO_4)_3F$, a choice of synthesis of fluoride based mixed halo-sulphate phosphor co-doped by RE and RE with transition metal is made.

We have already studied crystal structure, PL, TL, TL response, fading and reusability by doping RE and transition metals and energy transfer from $Ce^{3+}\rightarrow Eu^{2+}\rightarrow Eu^{3+}$ in $K_3Ca_2(SO_4)_3F$[20-22].In this paper, we are presenting detailed study of PL of $K_3Ca_2(SO_4)_3F$ by co-doping Ce, Dy and Eu, Mn.

II. EXPERIMENTAL

The sample $K_3Ca_2(SO_4)_3F$, $K_3Ca_2(SO_4)_3F:Ce^{3+},Dy^{3+}$ and $K_3Ca_2(SO_4)_3F:Ce^{3+},Mn^{2+}$ were prepared by co-precipitation method, taking the following basic reaction into consideration:

$K_2SO_4 + 2CaSO_4 + KF = K_3Ca_2(SO_4)_3F$

In the co-precipitation method salts of different materials are used to precipitate together from a common solution. The precipitate then consists of an intimate mixture of two salts or solid solution. Salts of required materials are usually dissolved in water medium. They are co-precipitated either by

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Energy Transfer in Co-doped $KMgCl_3$: Ce^{3+}-Eu^{3+} Phosphor

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ABSTRACT

The present work discusses photoluminescence in $KMgCl_3$ singly doped by Ce^{3+} ions and Eu^{3+} ions independently and co-doped. Co-doped phosphor showed transfer of energy between a sensitizer ion Ce to an activator ion Eu and resulted into enhancement in photoluminescence emission. Phosphors have been prepared using wet chemical synthesis. XRD pattern of $KMgCl_3$ matched with the standard JCPDS file 20-0905. The PL emission spectra have been observed for Ce^{3+} at 353nm and 375nm due to 5d-4f transition at excitation wavelength of 338 nm. PL of Eu^{3+} is peaking at 596nm and 616nm at excitation wavelength of 394 nm in orange and red region, due to $^5D_0$-$^7F_1$ and $^5D_0$-$^7F_2$ transition.

$KMgCl_3$:Ce^{3+}-Eu^{3+} have two peaks in PL emission spectra in orange-red region of the spectrum at 596 nm and 616nm by UV excitation at 268nm due to transitions of Eu^{3+} ion with improved luminescence properties. The energy transfer from Ce^{3+} to Eu^{3+} has been discussed based on the excitation and emission spectra.

Keywords : Photoluminescence, Phosphor, XRD, Co-doped

I. INTRODUCTION

ver the last few years, intensive research has been evoted to the development of efficient luminescent aterials. In the view of developing new luminescent aterials, interest in the luminescent properties and nergy transfer process was developed. A number of eports have appeared describing spectroscopic roperties of pure and activated sulphides and evealing applications. Gedam et al. have reported the alosulphate materials as phosphors [1–8]. Moreover ixed sulphates are also known to be good PL and TL aterials. Sahare et al. [9–11] have studied mixed lphate systems for the applications in dosing of high energy radiations using TL technique. They synthesized and characterized $K_2Ca_2(SO_4)_3$:Eu, Dy [12] and $K_2Ca_2(SO_4)_3$:Eu [13]; LiNaSO4:Eu [14] and LiNaSO4:Eu,Dy [15]. Energy transfer between pairs of rare earth ions at dilution levels below the self-quenching limits is through multi polar interactions like dipole–dipole interactions or dipole–quadrupole interactions [16–18]. The energy transfer from Ce^{3+} to different activator ions in different host lattices has been reported [19-21].

Study on crystal structure, PL, TL, TL response, fading and reusability by doping RE and transition metals as well as energy transfer from

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EFFECT OF NICKEL OXIDE FILLER ON THE OPTICAL AND MORPHOLOGICAL PROPERTIES OF NANOCRYSTALLINE NICKEL OXIDE REINFORCED POLYANILINE NANOCOMPOSITES

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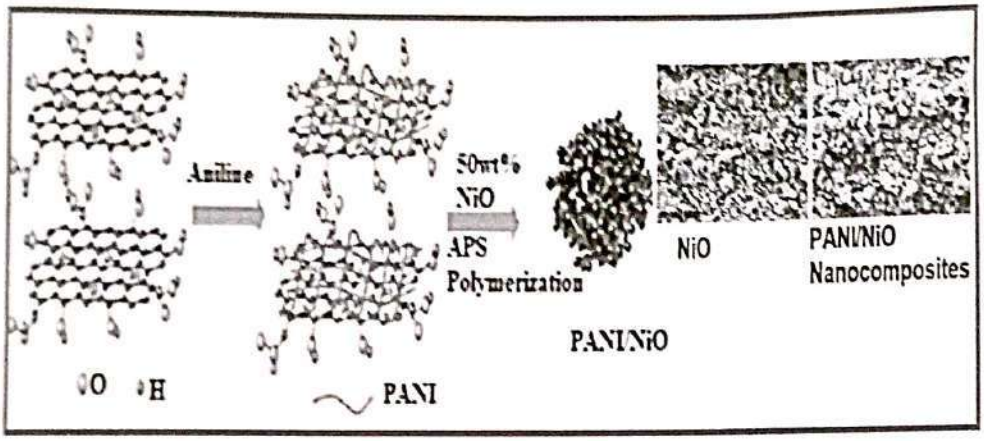
Abstract

Spherical nickel oxide (NiO) nanoparticles were prepared by using chemical precipitation method in which nickel carbonate hexahydrate ($NiCo_3.6H_2O$) used as precursor and starch as capping agent. During in-situ chemical oxidative polymerization of aniline, NiO nanoparticles (50 Wt%) were incorporated into polyaniline (PANI) matrix at 4°C using ammonium persulphate as an oxidant. The synthesized PANI/NiO nanocomposites have been characterized by means Ultraviolet (UV)-Visible spectra and scanning electron microscopy (SEM) for studying optical and morphological properties. UV-Visible absorption spectroscopy of PANI/NiO nanocomposites was studied to investigate optical behavior after doping NiO nanoparticles into polyaniline matrix. The addition of NiO nanoparticles gives to the red shift of π-π^* transition of PANI. SEM image of PANI/NiO nanocomposites reveals the presence of NiO in polyaniline which is homogeneously distributed throughout the polymer sample.

Keywords: NiO, PANI/NiO nanocomposites, UV-Visible spectra, Energy band gap, SEM.

GRAPHICAL ABSTRACT



INTRODUCTION

In recent years, the development of inorganic/polymer hybrid materials on nanometer scale have been receiving significant attention due to a wide range of potential applications in optoelectronic devices and in field effect transistors. The nanoscale inorganic fillers exhibit high surface to volume ratio and thus expected to enhance drastically the optical, electrical and dielectric properties of conducting polymer. In general, synthesis of hybrid of polymer/inorganic material has the goal of obtaining a new composite material having synergetic or complementary behaviors between the polymer and inorganic material [1].

Composites based on conducting polymers have recently emerged as a new class of potentially useful materials leading to the wide range of technological applications. Conducting polymers provide fabulous scope for tuning of their electrical conductivity from semiconducting to metallic region by way of doping [2]. Among the available conducting polymers, Polyaniline (PANI) is found to be the most promising because of its unique electrical and optoelectronic properties due to extended -conjugated electron systems, its low-cost monomer, exceptional solution processability, good thermal and environmental stability and the ability to switch reversibly from its insulating to conducting state via either electrochemical or chemical doping[3]. Therefore, the most promising electrically conducting PANI used in electronic devices [4], sensors [5], batteries [6], supercapacitors [7] and corrosion protection in organic coatings.

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Nanotechnology

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THE IMPACT OF CORONA VIRUS ON INDIAN ECONOMY

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Abstract:Corona virus has created third major trouble in front of the Indian economy. In November 2016, the economy hit the note ban, when suddenly 500 and 1000 currency notes were banned overnight. Due to demonetization, the economy of India running on cash received a strong break, which completely shook the unorganized sector of India. Two and a half million units in the unorganized sector were closed and the real estate sector was badly affected. People have lost jobs in large numbers. After that India's economy suffered as GST. Meanwhile, on the one hand, the problem of NPAs came in front of the banks; on the other hand, non-financial companies also faced difficulties. This had an impact on employment. Overall, this was the second major push for the Indian economy. After this, the situation looked a bit careful by 2020, but a Coronavirus again presented a formidable challenge to the Indian economy. This time not only the Indian economy but also the financial situation of other countries of the world was shaken. But the case in India became worse due to the migration of the workers. According to data from the Center for Monitoring Indian Economy (CMI), the unemployment rate in the week ended on August 23 was 7.46 percent. The rate was 9.98 percent in urban areas and 6.32 percent in rural areas.The present research paper is written to find information about the impact of Corona on various sectors of the Indian economy, in order to identify the relationship between the impact of coronavirus in India and the economic downturn. In the same way, exploring measures by which it is possible to reduce the effect of corona and based on the information obtained by the conclusion, suggestions can be made for the development of the economy.

Keywords: Coronavirus, Economy, GDP, Economic Slowdown

Data Collection Method Used For Research:

Data for the research paper has collected from newspaper, books, magazines, reports, and websites

The Objective of research:

1) To know the impact of coronavirus on various sectors of the Indian economy.
2) To discover the reasons for India's economic slowdown.
3) To Identifying areas of the Indian economy that have not been significantly affected by the corona virus.
4) To give suggestions for eliminating the economic slowdown of the Indian economy based on information by the conclusion of the study.

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Golhar.

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PAPER • OPEN ACCESS

Prediction of aluminium content in a metal using SPSS based linear regression analysis.

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Journal of Physics: Conference Series 1913 (2021) 012002 doi:10.1088/1742-6596/1913/1/012002

Prediction of aluminium content in a metal using SPSS based linear regression analysis.

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Abstract. In aluminium industry, it is very important to know the type or grade of aluminium metals and its composition present within the aluminium metals using non-destructive testing (NDT). A method is required which is unique and help to know the type of the aluminium material in order to characterize the aluminium samples. Ultrasonic testing is one of the best NDT techniques which are used for characterization of properties of the material. Recently it is observed that ultrasonic testing parameters are significantly depends on microstructural or mechanical properties of materials and the parameters are affected by change in structural properties of materials. To extract the more information from ultrasonic signals, signal processing techniques are the best tools which are using now days. In this paper new technique is introduced to obtain the concentration of aluminium in aluminium material in terms of ultrasonic parameters hardness, velocity, attenuation & modulus of elasticity by using linear regression analysis using Statistical package for Social Sciences i.e., SPSS statistics. The regression equation which is obtained to calculate aluminium percentage is compared with the experimental value of aluminium percentage in the materials. In the present paper the accuracy or reliability of the mathematical model has been estimated. To estimate the aluminium percentage in aluminium this type of model will be very helpful.

1. Introduction

In ultrasonic techniques, ultrasound is allowed to pass through the material and penetrates the interior of the material deeply for inspection. Instead of high energetic beam of x-rays or gamma rays ultrasonic techniques is the most practical alternative method of detecting defects inside metals. Ultrasonic help to determine important details about the structure of big size metals [1,2] and which is also used to determine material properties [3]. Signal processing techniques are the important tools which are used to determine the information present in the received ultrasonic data, [4-7]. Using experimental data, mathematical model is formulated which is a new way to study or characterize the materials [8]. From many years non-destructive testing is used in number of industries and play a very significant role for characterization of materials. Signal processing techniques play very important role and significantly advanced the cutting edge of non-destructive testing and evaluation. This paper briefly reviews the importance of signal processing in NDT. In this paers linear regression analysis by SPSS statistics is used to characterize the aluminium materials and also discussed the relation between aluminium percentages of materials in terms of various ultrasonic parameters. The formulation of this relation on the basis of experimental result is a unique and advance approach towards to analyse the materials. The theory of investigation as suggested by SPSS statistics, IBM Corporation is proper approach of expressing the reaction of any phenomenon in terms of proper interconnection of various inputs of the phenomenon.

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Ultrasonic Non Destructive Techniques
Alumnium
neural Network

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Citations	10	10
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Solving some special classes of standard congruence of prime modulus of higher degree

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Abstract
In this paper, some special classes of standard congruence of prime modulus of higher degree are considered for study. The main aim was to find a method of finding their solutions. After the rigorous study, it is found that each of the first two congruence have unique solution while the second two have exactly three solutions each. The formula/method for solutions obtained is tested by citing numerical examples and verified true. Now it is possible to solve the said congruence very easily in the least time.

Keywords: congruence of higher degree, fermat's theorem, inverse-modulo a prime, prime modulus

Introduction

A congruence of the type: $x^n \equiv a \ (mod\ p), p\ an\ odd\ prime$, is called a standard congruence of (higher) degree n. The congruence is called solvable if a is nth power residue of p [1].

Many more congruence is solved by a number of mathematicians establishing formulae or algorithmic methods. Even then many more congruence are yet remain to formulate. The authors have successfully formulated many such congruence [5], [6], [7], [8], [9]. Here, four such congruence are considered for solutions. No method or formula is found for their solutions in the literature of mathematics. Without using any formula, such congruence become more complicated to find solutions. In [2], Problem-7, page-115, a problem is found: If $(a, p) = 1$, and p is prime such that $p \equiv 2\ (mod\ 3)$, then the congruence: $x^3 \equiv a\ (mod\ p)$, has the unique solution given by $x \equiv a^{\frac{2p-1}{3}}\ (mod\ p)$. Abruptly, an idea of these congruence under consideration come in the authors' mind. Such type of congruence are:

$x^7 \equiv 3\ (mod\ 11)$; $x^{11} \equiv 11\ (mod\ 17)$; $x^{15} \equiv 7\ (mod\ 23)$; $x^{19} \equiv 2\ (mod\ 29)$;

And $4x^3 \equiv 3\ (mod\ 5)$; $x^9 \equiv 5\ (mod\ 13)$; $x^{13} \equiv 3\ (mod\ 19), etc.$

These are of the types: $x^{\frac{2p-1}{3}} \equiv b\ (mod\ p)\ and\ ax^{\frac{2p-1}{3}} \equiv b\ (mod\ p)$;

$x^{\frac{2p+1}{3}} \equiv b\ (mod\ p)$; $ax^{\frac{2p+1}{3}} \equiv b\ (mod\ p)$ $etc.$

The authors have tried their best to find the methods of solutions of these congruence and their efforts are presented here in this paper.

Problem-Statements

The problems are stated in the form of theorems as under

Theorem-1: The congruence: $x^{\frac{2p-1}{3}} \equiv b\ (mod\ p)$, $p\ odd\ prime, p \equiv 2\ (mod\ 3)$, has a unique solution given by $x \equiv b^3 (mod\ p)$.

Theorem-2: The congruence: $ax^{\frac{2p-1}{3}} \equiv b\ (mod\ p)$, $p\ odd\ prime, p \equiv 2\ (mod\ 3)$, has a unique solution given by $x \equiv \bar{a}^3 b^3 (mod\ p)$.

Theorem-3: The congruence: $x^{\frac{2p+1}{3}} \equiv b\ (mod\ p)$, $p\ odd\ prime\ and\ p \equiv 1\ (mod\ 3)$, can be reduced to a standard cubic congruence prime modulus and has exactly three incongruent solutions.

Theorem-4: The congruence: $ax^{\frac{2p+1}{3}} \equiv b\ (mod\ p)$, $p\ odd\ prime\ and\ p \equiv 1\ (mod\ 3)$, can be reduced to a standard cubic congruence of prime modulus and hence has exactly three incongruent solutions.

Literature Review

Proof of Theorem-1

$p \equiv 2\ (mod\ 3), hence\ p - 2 = 3k \Rightarrow \frac{2p-1}{3} = 2k + 1$, odd an integer.

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PLANE SYMMETRIC SPACE-TIME WITH WET DARK ENERGY IN BIMETRIC RELATIVITY

Abstract: In this paper, plane symmetric space-time is studied with the matter wet dark energy in the context of Rosen's Bimetric Theory of Relativity. Here it is shown that only vacuum model can be obtained.

Keywords: Plane Symmetric, Wet Dark Energy, Bimetric Relativity, General Relativity.

Mathematical Subject Classification No.: 83C05.

1. Introduction

A new theory of gravitation called the Bimetric theory of gravitation, was proposed by Rosen [12, 13, 9] to modify the Einstein's general theory of relativity by assuming two metric tensors, viz., a Riemannian metric tensor g_{ij} and a background metric tensor γ_{ij}. The metric tensor g_{ij} determines the Riemannian geometry of the curved space time which plays the same role as given in the Einstein's general relativity and it interacts with matter. The background metric tensor γ_{ij} refers to the geometry of the empty (free from matter and radiation) universe and describes the inertial forces. This metric tensor γ_{ij} has no direct physical significance but appears in the field equations. Therefore it interacts with g_{ij} but not directly with matter. One can regard γ_{ij} as describing the geometry that would exist if there were no matter. Moreover, the bimetric theory also satisfied the covariance and equivalence principles: the formation of general relativity. The theory agrees with the present

COVID-19 : CHALLENGES AND OPPROTUNITIES

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Abstract : The present situation of the world is probably the worst time in the history of any country because it has shuffled whole system upside down and raised many questions with regard to the different sectors. An attmpt has been made here in this paper to analyze the effect of corona virus on society in terms of economy, politics, religion, education, global issues, etc. It also tries to seek answers to some questions that the society will face after the slowdown of this pandemic. It is an attempt to look at this world problem as an opportunity. Amidst all threats related to life and humanity, there can be certainly a ray of hope that safely brings the society out of this hurdle. This pandemic also provides different opportunities to find new ways in production, technology, education, job policies, global relations, medicinal research, infrastructure, market policies, environment etc.

Key Words: Pandemic, society, challenges, opportunities.

Introduction :

COVID-19 has now become a pandemic threat to the whole world. It has shuffle the world from upside down drastically. All the countries in the world are on the same verge of threat of the virus as they are more or lesser at the risk of life. This period of pandemic has equally affected most countries in Europe and Africa. Thinkers have a strong doubt about its nature as a man made virus to cater the selfish motif of a country and to attain a victory over world by means of destructing and devastating the rival nation. Yet there is no stamping on the truth. Out of many probable reasons one is its natural existence and the dangerous spread. For every nation, including India the first marathon task is to save the population, and the second is to control the pandemic and come out of this emergency. While it is surging as a challenge for the globe, it can also be proved as an opportunity on the other side. The effects of this peril on the world are to be long lasting and difficult to tackle. The complex nature of overall society and its interrelations, interdependence of various sectors makes the problem more complicated to solve.

Role of National Assessment and Accreditation Council (NAAC) in Quality Assessment in Higher Education

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Abstract:

Never before has there been as much intense discussion about quality and excellence these days. 'Evaluation to ensure quality' has been widely discussed around the world since the late 20th century. This whole movement can be seen as encouraging an 'evaluation culture'. In India, this movement took concrete shape only in the last decade of the last century, when the National Assessment and Accreditation Council (NAAC) (in 1994) was established. Some other evaluation organizations also came into existence in the government sector for the evaluation of higher education institutions and programs.

The objective of the National Assessment and Accreditation Council is to examine the quality and specialties of higher education in India through a combination of self-assessment and external quality assessment. Many institutions have voluntarily adopted the evaluation of the National Assessment and Accreditation Council and have proudly displayed their accreditation status. There are some institutes that have expressed apprehensions about the evaluation of the National Assessment and Accreditation Council. For an in-depth understanding of the complex process of external quality assessment, it would be useful to analytically examine the motivational components of the National Assessment and Accreditation Council for the intuitive demand for evaluation, while on the other hand the factors that discourage such evaluation be understood. The objective of this research paper is to study the role of the National Assessment and Accreditation Council (NAAC) in quality assessment in higher education.

Keywords: National Assessment and Accreditation Council, Evaluation, Accreditation,

Data Collection Method Used For Research:

Data for the research paper has collected from newspaper, books, magazines, reports, nd websites

he Objective of Research:

1) To study the role of the National Assessment and Accreditation Council (NAAC) in quality assessment in higher education.
2) To know about Accreditation, Assessment, and SSR
3) To searching the information about the current situation of NAAC Accreditation
4) To give suggestions for College preparation for NAAC based on information by the conclusion of the study.

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CERTIFICATE

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in the Special Edition of **THE RESEARCH JOURNAL (TRJ)**: Vol. 7 Issue 1 ***January to February 2021*** *during One Day NAAC Sponsored National Conference organized by Amar Sewa Mandal's Kamla Nehru Mahavidyalaya, Nagpur, Maharashtra held on 8th January 2021.*

Smeeta

Dr. Smeeta A. Wanjarri
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RESEARCH ARTICLE IMPACT OF PANDEMIC COVID-19 ON EDUCATION IN INDIA

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Nagpur.

Abstract :- The impact of pandemic COVID-19 is observed in every sector around the world. The education sectors of India as well as world are badly affected by this. It has enforced the world wide lock down creating very bad effect on the students' life. Around 32 crore learners stopped to move schools/colleges and all educational activities halted in India. The outbreak of COVID-19 has taught us that change is inevitable. It has worked as a catalyst for the educational institutions to grow and opt for platforms with technologies, which have not been used before. The education sector has been fighting to survive the crises with a different approach and digitising the challenges to wash away the threat of the pandemic. This paper highlights some measures taken by Govt. of India to provide seamless education in the country. Both the positive and negative impacts of COVID-19 on education are discussed and some fruitful suggestions are also pointed to carry out educational activities during the pandemic situation.

Introduction :-

The pandemic Covid-19 has spread over whole world and compelled the human society to maintain social distancing. It has significantly disrupted the education sector which is a critical determinant of a country's economic future. On February 11, 2020, the World Health Organization (WHO) proposed an official name of the virus as COVID-19, an acronym for Corona virus disease 2019. It was first identified in Wuhan, China on December 31, 2019. First death by COVID-19 was the 61-year old man in Wuhan, China on January 11, 2020. WHO declared COVID-19 as a pandemic on March 11, 2020. The first case of the COVID-19 pandemic in India was reported on 30 January 2020 in the state of Kerala and the affected had a travel history from Wuhan, China (Wikipedia). The first death due to COVID-19 was reported in India on March 10, 2020. It has affected more than 4.5 million peoples worldwide (WHO). According to the UNESCO report, it had affected more than 90% of total world's student population during mid April 2020 which is now reduced to nearly 67% during June 2020. Outbreak of COVID-19 has impacted more than 120 crores of students and youths across the planet. In India, more than 32 crores of students have been affected by the various restrictions and the nationwide lockdown for COVID-19. As per the UNESCO report, about 14 crores of primary and 18 crores of secondary students are affected which are two mostly affected levels in India.

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RESEARCH ARTICLE IMPACT OF PANDEMIC COVID-19 ON EDUCATION IN INDIA

TO BE PUBLISHED IN

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Dr. Anil Dodewar
(Chief Editor)

Officiating Principal
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Sindhu Mahavidyalaya, Nagpur-17

Dr. Devendra Bhonga
(President)

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Dr A.G Thadani 2020-21

COVID-19 : CHALLENGES AND OPPROTUNITIES

Dr. Anand Thadani
Vice principal,
Dada Ramchand Bakhru Sindhu Mahavidyalaya,
Nagpur

Dr. Mukesh Kaushik
Assistant Professor
Dada Ramchand Bakhru Sindhu Mahavidyalaya,
Nagpur

Abstract : The present situation of the world is probably the worst time in the history of any country because it has shuffled whole system upside down and raised many questions with regard to the different sectors. An attmpt has been made here in this paper to analyze the effect of corona virus on society in terms of economy, politics, religion, education, global issues, etc. It also tries to seek answers to some questions that the society will face after the slowdown of this pandemic. It is an attempt to look at this world problem as an opportunity. Amidst all threats related to life and humanity, there can be certainly a ray of hope that safely brings the society out of this hurdle. This pandemic also provides different opportunities to find new ways in production, technology, education, job policies, global relations, medicinal research, infrastructure, market policies, environment etc.

Key Words: Pandemic, society, challenges, opportunities.

Introduction :

COVID-19 has now become a pandemic threat to the whole world. It has shuffle the world from upside down drastically. All the countries in the world are on the same verge of threat of the virus as they are more or lesser at the risk of life. This period of pandemic has equally affected most countries in Europe and Africa. Thinkers have a strong doubt about its nature as a man made virus to cater the selfish motif of a country and to attain a victory over world by means of destructing and devastating the rival nation. Yet there is no stamping on the truth. Out of many probable reasons one is its natural existence and the dangerous spread. For every nation, including India the first marathon task is to save the population, and the second is to control the pandemic and come out of this emergency. While it is surging as a challenge for the globe, it can also be proved as an opportunity on the other side. The effects of this peril on the world are to be long lasting and difficult to tackle. The complex nature of overall society and its interrelations, interdependence on various factors makes the problem more complicated to solve.

Role of National Assessment and Accreditation Council (NAAC) in Quality Assessment in Higher Education

Dr. Anand Thadani
Vice Principal
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Mahavidyalaya, Nagpur

Dr. Mukesh Kaushik
Assistant Professor
Dada Ramchand Bakhru Sindhu
Mahavidyalaya, Nagpur

Abstract:

Never before has there been as much intense discussion about quality and excellence these days. 'Evaluation to ensure quality' has been widely discussed around the world since the late 20th century. This whole movement can be seen as encouraging an 'evaluation culture'. In India, this movement took concrete shape only in the last decade of the last century, when the National Assessment and Accreditation Council (NAAC) (in 1994) was established. Some other evaluation organizations also came into existence in the government sector for the evaluation of higher education institutions and programs.

The objective of the National Assessment and Accreditation Council is to examine the quality and specialties of higher education in India through a combination of self-assessment and external quality assessment. Many institutions have voluntarily adopted the evaluation of the National Assessment and Accreditation Council and have proudly displayed their accreditation status. There are some institutes that have expressed apprehensions about the evaluation of the National Assessment and Accreditation Council. For an in-depth understanding of the complex process of external quality assessment, it would be useful to analytically examine the motivational components of the National Assessment and Accreditation Council for the intuitive demand for evaluation, while on the other hand the factors that discourage such evaluation be understood. The objective of this research paper is to study the role of the National Assessment and Accreditation Council (NAAC) in quality assessment in higher education.

Keywords: National Assessment and Accreditation Council, Evaluation, Accreditation,

Data Collection Method Used For Research:

Data for the research paper has collected from newspaper, books, magazines, reports, and websites

The Objective of Research:

1) To study the role of the National Assessment and Accreditation Council (NAAC) in quality assessment in higher education.
2) To know about Accreditation, Assessment, and SSR
3) To searching the information about the current situation of NAAC Accreditation
4) To give suggestions for College preparation for NAAC based on information by the conclusion of the study.

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Edited By
DR. SMEETA A. WANJARRI

Reforms and Benchmarks in NAAC Accreditation-2020 Onwards

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Need for Internal Reformation of Apply Innovative echnologies to Train Teaching and Non-Teaching Staff or NAAC Accreditation in Colleges of Nagpur District

Dr. Mahendra L. Vanjari
Assistant Professor
D.R.B. Sindhu Mahavidyalaya, Nagpur

Abstract:-

In this research article the researcher present Need for Internal Reformation of Apply Innovative Technologies to Train ing and Non-Teaching Staff for NAAC Accreditation in Colleges of Nagpur District

This paper present interpretation of data collected from 15 NAAC accredited colleges in 5 districts of Nagpur District. For dy purpose responses from 150 (10 from each college) teaching staff, 120 (8 from each college) non-teaching staffs have Hence, data is collected from total 870 respondents in NAAC accredited colleges in Nagpur District.

I. INTRODUCTION

Learning organizations are essentially service providers but they are also work places for their employees. So, learning zations cannot remain unaffected by the changes taking place world over. Education is today looked on as a business world including India and the competition is getting stiff. In this competitive scenario, management of human resources in sities is just as challenging as it is in any other organization. The human resource management strategies of an organization ace the way in which its employees work as well as how the organization itself works. Higher Education Organizations go fundamental changes due to globalization, growing competition for funding and staff as well as increasing institutional omy. These changes are linked to new responsibilities requiring greater managerial and leadership competences. Despite the xpenditures of higher education organizations on their staff a systematic application of strategic planning, managing and oping 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 d with the strategic direction of the university. If the strategic direction is not clear or HRD activities are not in alignment ie strategy, HRD activities become inefficient and useless, even if they are excellent. Therefore, it is crucial to understand the f higher education and the current flow of their change to figure out what role career development should play in learning zations.

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

Hence, in the backdrop of above information present study attempted to find out the current scenario of Human Resource pment of NAAC accredited learning organizations in Nagpur District. This will enable to find out scope for improvement of olicies of NAAC accredited educational organizations. This will help in improving the quality of education provided by rganizations to their students. Thus, this study is significant for improvement and betterment of learning quality of learning zations in Nagpur District of Maharashtra.

1: Opinion of teaching staff about management use new technologies for training

gement use new technologies for trainng	Frequency	Percent
	133	88.7
	17	11.3
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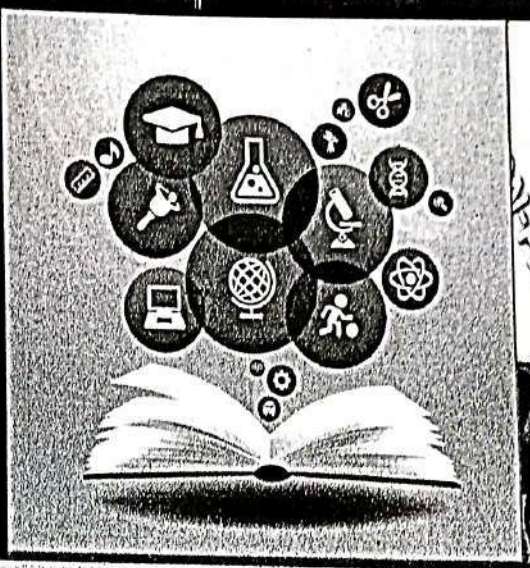

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A Study of Usage of Transportation and Logistics services of Pharmacological Industries in Nagpur Region

Dr. Mahendra L. Vanjari
Assistant Professor D.R.B. Sindhu Mahavidyalaya, Nagpur

Abstract:-

Multimodal Transportation and Logisticsindustries have grown immensely in the India. There is a lot of competition in the industry. The usage of Transportation and Logistics services has grown. This study was help in understanding the Multimodal Transportation and Logistics Services that the service provider is maintaining and also the customer loyalty. This was clear the basic satisfaction level of the customer with the existing service provider; it was also enable to understand local market feedback. It was also enable us to understand the clear position of theMultimodal Transportation and Logistics Service providers. This study was reflect the position of the market leader in Nagpur region. This study was help in knowing the customer satisfaction level with the Multimodal Transportation and Logistics service providers for the Nagpur region. Also this was help in understanding the activities and that the service providers have adopted to increase the customer loyalty.

Introduction

The whole Multimodal Transportation and Logistics of a Pharmacological company from the manufacturer's point of view can be generally divided into two parts, inbound logistics which is from the supplier to manufacture plant and outbound logistics which is from manufacturer to customers or even to end consumers. In the past few years, a lot of studies have been made on the outbound logistic area. Since the outbound operations have been streamlined and extracting extra benefit has become more and more difficult, companies are turning their attention to inbound operations. In the following study, we are going to focus on the inbound logistic area and expect to explore something new in this field. Logistics systems theoretically consist of two parts, the information flow and the physical material flow. The information flow includes production plan, material requirements, and delivery schedules, etc. The smoother the information flow, the earlier information can be reached. Thus the logistic providers can fulfill quick response according to customer requirements. Finally, the negative lead-time (lead time without any value-added) can be reduced as well as the total logistic cost. But the level of information sharing is, to a great extent, determined by the relationship among companies.

The Nagpur region working some leading third-party-logistic provider is actively developing relationships with its key accounts to improve its service level with streamlined information flow. Our task is to map an ideal inbound logistic system with which the integrated effectiveness and efficiency can be reached so that all the participants in the supply chain can benefit. In order to solve the main problem of how to improve the effectiveness and efficiency in the inbound logistic system, several sub-problems need to be solved step by step. Firstly, the unique features of the inbound logistic system are going to be studied. This was provide us with a better understanding of the inbound logistic systems. Secondly, the parameters that can be used to evaluate the effectiveness and efficiency of the logistic system

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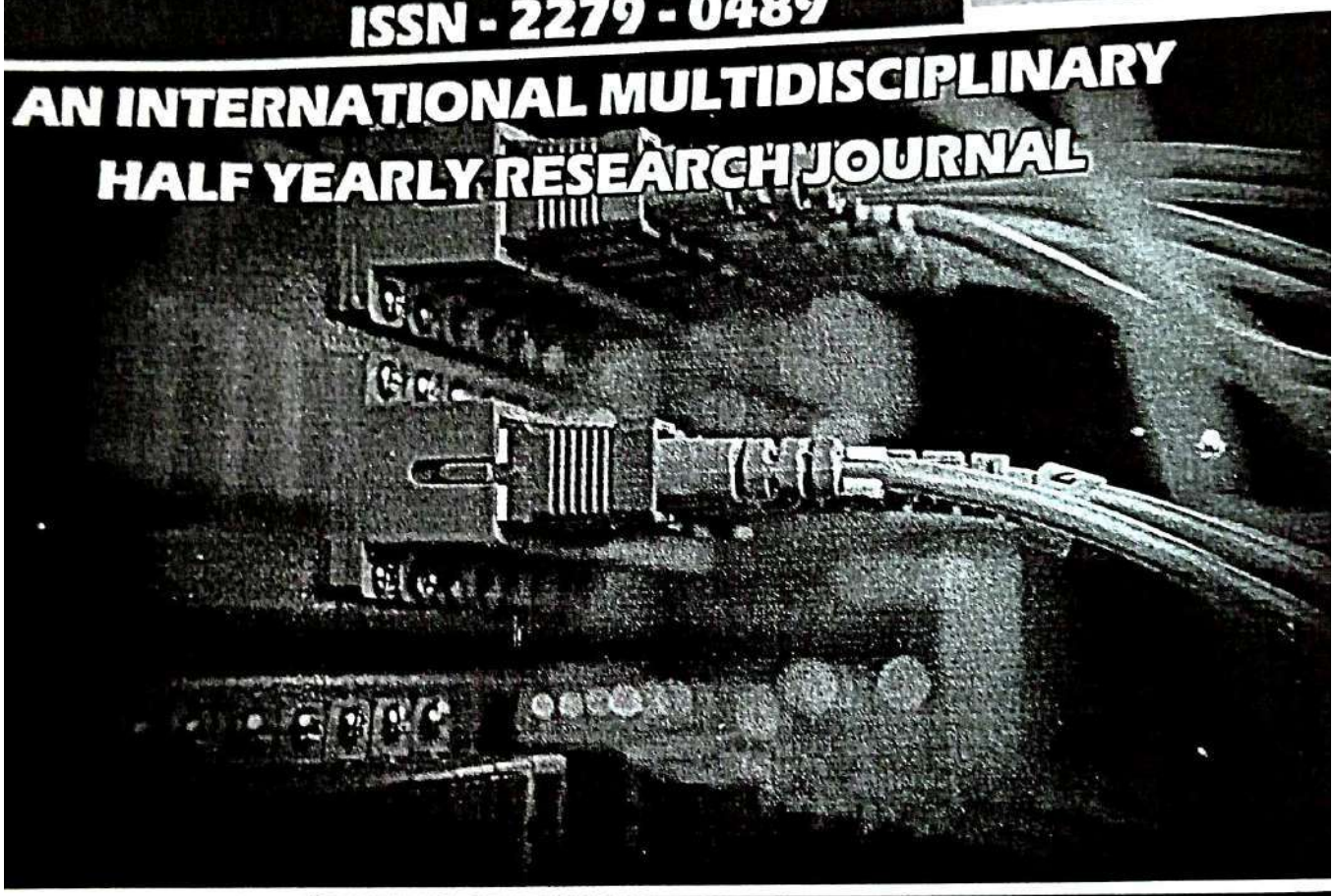

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9. Awareness and Satisfaction Level of Human Resource Policies and Practices in Maharashtra State Electricity Board (MSEB)

Dr. Mahendra L. Vanjari
Assistant Professor, D.R.B. Sindhu Mahavidyalaya, Nagpur.

Abstract

Maharashtra State Electricity Board (MSEB) has been incorporated under Indian Companies Act 1956 pursuant to decision of Govt. of Maharashtra to reorganize erstwhile Maharashtra State Electricity Board. MSEB is the Maharashtra State government company working for Electricity generation from Coal, Water & Gas. The main focus of study is human resource policies and practices in Maharashtra State Electricity Board (MSEB) in Maharashtra State.

MSEB is one of the large powers generating company in Maharashtra. The company overall functioning of human resource department and their policies for employees, it was decided that to kwon their human resource policies of employees and level of satisfaction is carried out by the researcher in this study.

Introduction

Human resource is considered as the backbone of any economic enterprise. In recent years the economist has added "Human resource" besides land, capital and technology as the key factor for building and developing the nation. The optimal utilization of natural resources and the factor inputs of capital technology depend on the extent of use of human resources. The human resource management is a proactive central strategic management activity which is different from conventional personnel management. Human resource management is a sun rise concept traditional personnel management is a sun set concepts. The HRM is a growing concept. It tremendous relevance to productivity industry. Human input is the single largest that goes in power industry. The level of efficiency of production of this input reflected in the quality of product provided by industry to its customer. The most of the employees on regular and contract show excellent performance but just after being regularized their performance decreases,

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STUDY OF THE REASONS FOR THE CONTINUOUS DECLINE OF INDIAN CURRENCY

Dr. Satish V. Tewani*

ABSTRACT

In the current era, the currency of India's 'rupee' has been seen to fall continuously. According to the data, from January 2018 to the month of July, its value had dropped by an average of eight percent. For the time being, the investors have to spend 72.93 rupees to buy a dollar. The question is that after the Russian currency 'ruble' in the BRICS group (Brazil, Russia, India, China, and South Africa) it is the Indian 'rupee' whose value has dropped the most, which is a matter of concern. History testifies that the Indian rupee has been devalued thrice since independence. Indeed, Azad India also followed the IMF's parity system. It is claimed that on 15 August 1947, the exchange rate between the dollar and the rupee was 1 USD = 1 INR, but today one has to spend 72.93 rupees to buy one dollar. The Government of India is being held responsible for the 73% fall in the value of the rupee in 74 years. But to find out the real reasons for this, there is a lack of research on this subject. It is natural to raise the question that what reasons have changed in the current way that India's currency is getting weaker than other currencies, including the US dollar? With a view to finding out the reasons for the recent fall in the value of the currency of India, to know the advantages and disadvantages of the fall in the value of the currency of India, this research topic has been chosen.

Keywords: *India's 'Rupee', GDP Growth, Value of the Currency, Dollar.*

Introduction

According to the International Standards Organization, there are 185 currencies worldwide. However, most of these currencies are used by many countries within the country. The extent to which any currency is prevalent around the world depends on the economy and power of that country. The US currency dollar is a global currency. The dollar and euro are accepted with great popularity in international trade. the dollar has become a global currency. Euros and Dollars are very famous and accepted in international trade. The foreign currency reserves held by central banks around the world are 64 percent of US dollars. In such a condition, the dollar itself becomes a world currency. The dollar is a global currency, it is a symbol of the strength of the American economy. The first powerful currency in the world is the dollar and the second powerful currency in the world is the euro. Obviously, the strengthening and acceptance of the dollar reflect the strength of the American economy. 65 percent of the total dollar is used outside the US. The dollar is involved in 85% of trade worldwide. Therefore, foreign banks need dollars in international trade.

The current strengthening of the dollar started in 1944 following the Bretton Woods Agreement. Prior to this, most countries considered gold only the best standard. The government of those countries used to say that they would decide their currency based on the demand for gold. When America had the world's largest gold reserves. The developed countries of the world joined Bretton Woods of New Hampshire and set exchange rates for all currencies against the US dollar. The agreement also allowed other countries to support their own currency instead of gold. In the early 1970s, many countries started demanding gold for the dollar, as they were fighting inflation. At that time President Nixon separated the dollar from gold, instead of allowing Fort Knox to liquidate all its reserves. By then, the dollar had become the world's most strong currency.

Vice-Principal, Dada Ramchand Bakhru Sindhu Mahavidyalaya, Nagpur, Maharashtra, India.

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THE STUDY OF CHANGING ENVIRONMENT OF THE SERVICE SECTOR IN INDIA

Dr. Satish V. Tewani
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Email: satish.tewani@gmail.com

Abstract:

It is widely accepted that the services sector has played an important role in India's development, but there are some questions about the exact extent of the sector's contribution, and scholars are debating it. According to scholars, the services and industry sectors were competing with each other until 1996–97, but services have grown rapidly since then. In this regard, some changes were made to the official figures. Earlier figures were based on 1993–94 and later new figures were based on 1999–2000. There are several sub-topics under the service sector in National Income Statistics. That is, there were statistics scientists from public administration, banks, insurance, and information technology. The details of the increase in value come from published documents and hence no one doubts its authenticity. Similarly, information on the organized and unorganized sector is considered to be the same, as agriculture is the dominant unorganized sector and a mechanism for collecting data in this regard has been around for a long time.

National income can be calculated separately. Part of this is to make an actual measurement and a separate formal system for it, the rest can be measured with some approximation. The sector includes income generated by the Indian economy. These include small manufacturers of plastic and readymade garments and weekly markets in which they sell their goods. There are also many small businesses such as retail and wholesale, small restaurants, some social and personal service providers, private tuition, management consultants, security service providers, private health care providers. They include artists who make attractive costumes, sell ready-made food, provide cosmetics services, and entertain.

A sample survey is done to estimate how much value is added for the many workers in this remaining area, and it is usually done once every ten years. This was a sample survey for various subgroups. The estimates of the number of manpower in these various subgroups and the sample in the survey are several times higher than the value-added data. To do this, back-to-back sample census statistics are used every ten years. In this way, the rate of inflation in the base years is estimated. An index of growth is used to calculate how much growth has occurred in any given year.

This means an estimate of GDP growth based on data collected in the current year. However, the figure for the rest of the region is calculated using the growth index. In a sense, inflation in the rest of the sector is part of a predetermined process. Inflation in the rest of the region was 24% of GDP and was considered 1993–94. According to the latest figures, the rate of

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The Impact of Corona on Indian Economy

Dr. Satish V. Tewani
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Abstract:

The economic impact of the 2020 Coronavirus epidemic in India has been largely destructive. The World Bank and rating agencies initially forecast India's growth for FY 2021, the lowest figure seen in the three decades since India's economic liberalization in the 1990s. Many government businesses and industries have been affected due to the lockdown across the country due to coronavirus. The rate of economic growth has been affected due to domestic supply and demand being affected. According to the World Bank, not only India but the whole of South Asia can lose the benefits of poverty alleviation due to this epidemic. The International Labor Union has said that the coronavirus is not just a global health crisis, but has also become a major labor market and economic crisis that will affect people in a big way. An estimated 14 crore people lost employment during the lockdown while salaries for many others were cut. Less than a quarter of India's $ 2.8 trillion economic structure was functional under complete lockdown. A large number of farmers across the country who grow fruit and vegetables have also faced uncertainty. Three major global financial institutions have warned that the economic consequences of the covid-19 epidemic will be worse than anticipated. The International Monetary Fund (IMF). United Nations Trade and Development Conference (UNCTAD), and the World Bank estimate that the pace of the global economy may be slower than anticipated. Nearly 5,000 large multi-national companies can hold off on their foreign direct investment (FDI), as their earnings have fallen due to the Coronavirus lockdown. The IMF predicts that the Corona epidemic will hurt the global economy more than anticipated in 2020, followed by a sluggish recovery in2021.

The current research paper has been written to searching the information about the Impact of Corona on the Indian Economy, to understand the relation between the corona epidemic and recession in India, Finding areas that reduce the economic impact of the corona, and for giving suggestions for improving the development process of the economy based on information by the conclusion.

Keywords: Corona, Economy, Recession

Data collection method used for research:

Data for the research paper has collected from books, magazines, newspaper, reports and websites

The Objective of research:

1) To understand the relation between the corona epidemic and recession in India.
2) To searching the information about the impact of corona on the Indianeconomy.
3) Finding areas that reduce the economic impact of thecorona.

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From

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Effects of COVID-19 on the Different Sectors of The Indian Economy

Dr. Richa Kalyani
(Assistant Professor)
M.Com, M.Phil,M.B.A, SET(Commerce),Ph.D Dada Ramchand Bakhru
Sindhu Mahavidyalaya Panchpaoli, Nagpur

Abstract

The outburst of the Covid-19 pandemic is an uncommon stun to the Indian economy. The economy was in a parlous state before Covid-19 struck. With the continued country-wide lockdown, global economic slump and related disruption of demand and supply chain, the economy is probably going to confront an extended time of stoppage. The degree of the financial impact will depend on the range and earnestness of the COVID, the length of the lockdown and the way where the circumstance unfurls once the lockdown is lifted. The present paper focus on assessing the impact of pandemic on affected sectors, such as aviation, tourism, retail, capital markets, MSMEs, overall GDP, fiscal and monetary policy etc. In this paper the efforts have been taken, to describe the state of the Indian economy in the pre-Covid-19 period, to assess the potential impact of the shock on various segments of the economy, and to analyse the policies that have been announced so far by the central government and the Reserve Bank of India to ameliorate the economic shock and put forward a set of policy recommendations for specific sectors.

Keywords COVID 19, economic impact, GDP growth rate, sectoral impact, COVID relief measures

1.0 Introduction

The flare-up of COVID-19 has affected countries in a massive manner, particularly the cross country lockdowns which have carried social and economic life to a stop. A world which always buzzed with activities has fallen quiet and all the assets have been redirected to meeting the never-experienced emergency. There is a multi-sectoral effect of the pandemic as the monetary exercises of nation have slowed down. What is surprising and important is an alert which was rung in 2019 by the World Health Organization (WHO) about the world's failure to battle a worldwide pandemic. A 2019 joint report from the WHO and the World Bank assessed the effect of this pandemic at 2.2 percent to 4.8 percent of worldwide GDP. That forecast appears to have worked out as expected, as we see the world getting inundated by this emergency.

In another report named **'COVID-19 and the world of labour:** Impact and policy response' by International Labour Organization, it was explained that the crisis has already transformed into an economic and labour market shock, affecting not only supply (creation of products and enterprises) but also demand (utilization and investment). International Monetary Fund's (IMF) chief said that, 'World is faced with extraordinary uncertainty about the depth and duration of this crisis, and it was the worst economic fallout since the Great Depression'. India too is groaning under the yoke of the pandemic.

This COVID-19 pandemic has affected the manufacturing and the services sector — hospitality, tours and travels, medical care, retail, banks, hotels, land, education, IT, entertainment, media and others. The financial pressure has begun and will develop quickly. While lockdown and social separating bring about efficiency misfortune from one perspective, they cause a sharp decline in demand for goods and services by the consumers in the market on the other, consequently prompting a breakdown in financial movement.

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Authored by :

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Contribution of NAAC in assessment & accreditation of HEIs

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Abstract:-

Though India's higher education system is ranked very high, the vast education resource could have been utilized more effectively. HEIs in India shoulder the responsibility of enhancing quality standards. Though the institutions are increased in numbers, quality institutions adhering to global standards can be easilyreckoned. The present paper is analytical in nature which projects the contribution of NAAC in assessment and accreditation of various HEIs. It initiates to describe how education in India has sailed back so far to mould in its present transformation. It illustrates the role of the Government of India in post-independence period to provide new wings to the existing higher education system and the emerging need of an autonomous body for assessment and accreditation of various HEIs. On the later half, the paper portrays role and contribution of NAAC towards enhancing the quality standards of HEIs by its assessment and accreditation process. The paper aims to throw light on significant role and contribution of NAAC towards attainment of quality standards through HEIs.

Keywords:-

HEIs, Education System, UGC, NAAC, Contribution, Quality standards

I. CONTRIBUTION OF NAAC IN ASSESSMENT & ACCREDITATION OF HEIS

1. PRELUDE:

India's higher education system is the third largest in the world after US & China. The present India has vast resource of education-providers contributing in higher education which involvesmore than 1000 universities as compared to only 20 numbers of universities at the time of Independence. The assorted education system in the country is certainly one of the largest education systems in the world. The numbers of colleges were 496 in the year 1947 with around 2.41 lakh registrations. Today the country has more than 50 thousands HEIs to impart higher education, though quality higher education is still a concerned area for the education fraternity.The key accentuation always lies with the system to maintain quality standards in fast-changing scenario time-to-time and to enable various HEIs to fulfil the responsibilities in transforming atmosphere. The education system, particularly serving at higher level is expected to mould itself immediately to take new silhouette as need arises like recently the whole world has experienced due to 2020 pandemic disease, where need of the hour persuade to adopt digital platform worldwide.

The HEIs are thus expected to fulfil national & international standards to impart not only social and moral education but also to provide vocational and practical edification. All the 54 central, 416 state, 125 deemed, 361 private universities and 166 institutions of the country together building the higher education system of the country, shoulders to make better citizens for the world. Significant performance of 159 institutions of National Importance including IIMs, IITs, IIITs, NITs, IISERs and AIIMS cannot be underestimated to enhance the quality education standards, though all necessitates to have continual assessment system to apprise the quality standards emphasising on growth and development to provide more fruitful outcome. Universities in India are no doubt shielded by the Ministry of Education as well as State Governments and the Central Government. Appreciations surely go to UGC at the tertiary level to enforce quality standards and to coordinate the both forms of Government in India.

Ever-rising expectations from various HEIs should not be questioned in the light of the fact that the country has very ancient and deep-rooted education system. The history of education involving higher education has sailed very swiftly so far during this long tenure.

II. EXPEDITION & MILESTONES:

Indians should be considered to be fortunate to have a deep-rooted education system inheriting rich cultural and literal education. Around five thousand year old history of education in India should certainly have observed innumerable reformations to mould into present formal shape. Education was imparted in Gurukuls and Madarasas in the yesteryears. Later universities like Takshashila(6th Century B.C.) and Nalanda (4th Century A.D.) proved landmark and are still referred as a symbol of quality education. India witnessed Vedic Education before 600 B.C. Later in 1830s, the Lord Thomas Babington Macaulay brought schooling with English Language. Soon after, the British Government established Universities at Bombay, Calcutta, Madrasand Allahabad to promote the formal higher education in India.It transformed the enrooted ancient Indian Education System. In 1925,

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A Brief Study on Post-Modern Feminist Writers and Their New Feminist Consciousness of Writings

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ABSTRACT

The core objective of this paper is to demonstrate how some of the postmodern feminist writers depict their women in their literature. It's also highlighted about the various social and feminist approaches of the woman writers whose presentation is a great analysis with their new consciousness. In this paper it is collected briefly about the woman writers who present their contemporary woman characters in their discourse. This is the paper which proves that the post-modern Indian feminist writers are genuine in the aspect of their feminist consciousness.

Key words:

Postmodern – relating to Twentieth Century

Feminism - advocacy of women's rights on the ground of the equality of the sexes

Consciousness - a person's awareness or perception of something.

Introduction: Feminism in literature is pertaining to the representation of women in society and their related fluid position. The early postmodern feminist literature shows the clear signs of novel and varied approaches in relation to woman. Predominantly, some of the post-modern feminist writers are taken for citation to mark them as feminists. For the last three decades, Indo-Anglian literature has been significantly supported by the women writers- Kamala Das, Kamala Markandaya, Ruth Prewar Jhabvala, Anita Desai, Arundhati Roy, Shashi Deshpande, Jhumpa Lahiri, Shobha De and some others. Every one of these writers is particular in their style of writing but they have certain similarity talking about their woman as well as analyzing their category. The stories of these women writers may have very little space in the main

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संत कबीर और संत तुकाराम के काव्य में जीवनमूल्य

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हिन्दी साहित्य में □क्तिकाल का अपना विशिष्ट स्थान है। □क्तिकालीन संत साहित्य अपने युग का अद्वितीय चेतनामय साहित्य रहा है। भारत की पावन□ूमि पर अनेक महान विभूतियों ने जन्म लेकर भारत की संस्कृति को सपोषित करने का कार्य किया।

□ारतीय जीवन मूल्य : भारत के जीवन मूल्य मूलतः उनकी संस्कृति व धर्म में है। □क्तिकाल के संत कवियों ने समन्वयवादी दृष्टिकोण अपनाते हुए मानव कल्याण के लिए साहित्य सृजन किया वास्तव में साहित्य की शब्दनिष्ठा अधिक स्थाई होती है। साहित्य जीवन के यथार्थ को तो प्रस्तुत करता है साथ की राष्ट्र एवं जीवन मूल्यों की अभिव्यक्ति द्वारा उसके □विष्य की ओर इंगित करता है।

भारतीय जीवन मूल्यों में विश्वबंधुता की भावना के अनुरूप सभी प्राणियों के मंगल की कामना की जाती है। जहाँ प्रेम है, सद्भाव है, सेवा है, समता है, बलिदान व त्याग है, सत्य व करूणा है, संयम है। जहाँ पर पीड़ा को पीड़ा समझने की□ावना उसके अपने भीतर उपजी है। यह जीवन मूल्य विश्व के सर्वश्रेष्ठ जीवन मूल्य है।

भारत के साहित्यिक पुनरुत्थान को दिशा देने में मध्याकालीन संत कवियों का महत्वपूर्ण योगदान है। भक्तिकालीन संत कबीर, नानक, रैदास, तुलसी, नामदेव, तुकाराम, दादू दयाल आदि संतों ने अपनी वाणी से साहित्य का निर्माण किया। यह साहित्य जीवन मूल्यों पर आधारित है। संत साहित्य में सामाजिक बुराईयाँ कुरीतियाँ, आडंबर, जाति□ेद, छूआछूत, मोहमाया, विषयवासना की कटु आलोचना की गई है। उन्होंने अहिंसा, परोपकार, मानव सेवा, करूणा, नैतिकता, संयम, विश्वास जैसे मानवीय मूल्यों को प्रतिपादित किया है।

वर्तमान काल में भौतिक सुख सुविधा के कारण व्यक्ति स्वार्थी संकुचित मनोवृत्ति का हो गया। आज मानवीय मूल्यों में गिरावट आ गई है। वह पतन की ओर बढ़ रहा है। ऐसे समय हमारे संतो द्वारा प्रतिपादित मानवीय मूल्यों व उनके रचित साहित्य की वर्तमान में अत्यधिक जरुरत है। मैं यहाँ पर संत कबीर और संत तुकाराम के काव्य में आये जीवन मूल्यों को कुछ बिंदुओं के माध्यम से तुलनात्मक अध्ययन प्रस्तुत कर रहा हूँ।

वर्ण व्यवस्था : संत कबीर ने तत्कालीन वर्ण व्यवस्था और वर्णाश्रम का कड़ा विरोध किया। उन्हें जन्म के आधार पर ब्राह्मण जाति की श्रेष्ठता स्वीकार नही थी वे ब्राह्मण को ललकारते हुए कहते है –

जो तू ब्राह्मण, ब्राह्मणी जाया,
आन बाट काहे नहीं आया।

संत तुकाराम महाराज ने वर्ण व्यवस्था की कड़े शब्दों में निंदा की है। वे मनुष्य का वर्ण जन्म के आधार पर न मानकर कम तथा गुणों के आधार पर मानने के पक्ष में थे वे कहते है –

काय खंडिती भूमिका। वर्णा पायरिका लोका। २

जाति व्यवस्था : संत कबीर मनुष्य का मूल्यांकन जाति के आधार पर न कर कम के आधार पर करने के पक्ष में थे। भारतीय समाज में आज भी जाति □ेद मिटा नही स्वर्ण जाति के लोग अपने को श्रेष्ठ समझते है और वह निम्न जाति का शोषण व अत्याचार करते है जिसके कारण उनके कुल का नाम बदनाम होता है। इस संबंध में कबीरदास जी कहते है –

ऊँचे कुल का जनमिया, करनी ऊच न होय।
सुवरन कलश सुरा भरा, साधु निंद होय।। ३

मनुष्य की श्रेष्ठता जाति के आधार पर तय करना समाज की प्रमुख विशेषता बन गई थी। तुकाराम महाराज भक्ति साधना में जाति को महत्वपूर्ण न मानकर गुण को ही अधिक महत्वपूर्ण मानते है। उनका मानंना है कि ब्राह्मण को समाज में श्रेष्ठ दर्जा प्राप्त है लेकिन उनके कम सही नही है वह सच्चा ब्राह्मण नही –

यथा – वेश वंद्या पुरते। कोण ब्राह्मण निरूते। ४

कथनी – करनी में अंतर : मनुष्य कहता कुछ और है और करता कुछ है, यही प्रवृत्ति उसके पतन का कारण है और जब तक मनुष्य की वाणी और कार्य में समन्वय नही हो जाता, तब तक वह ब्रह्मा का साक्षात्कार नही कर सकता।

कवीर दास जी कहते है कि ब्रह्मा को प्राप्त करना हो तो [illegible] और कम में समन्वय स्थापित करना चाहिए अर्थात जो कुछ भी वह उपदेश देता है। स्वयं उस पर अमल [illegible] उसका उपदेश देना व्यर्थ है इस संबंध में कबीर कहते है कि –

2020-21 Dr. K. S. Gupta.

मूर्ख महासम्मेलन के जनक : पं. गोपाल प्रसाद व्यास

हिन्दी साहित्य में व्यंग्य-विनोद की नई धारा के जनक, हास्यरस में पत्नीवाद के प्रर्वतक। हास्य रसावतार के नाम से प्रसिद्ध, सामाजिक, साहित्यिक, राजनैतिक, व्यंग्य-विनोद के प्रतिष्ठा प्राप्त कवि एवं लेखक पंडित गोपाल प्रसाद व्यास जिन्होंने हास्य-व्यंग्य को अपनी रचना के माध्यम से एक ऊँचे मुकाम पर पहुँचाया है। यह उनका कार्य अस्मरणीय है। हिन्दी के हास्य कवियों में उनका विशिष्ट स्थान है।

पंडित गोपाल प्रसाद व्यास का जन्म १३ फरवरी १९१५ को उत्तरप्रदेश के मथुरा जिले के पारसौली नामक कस्बे में हुआ था। उनके पिता का नाम ब्रजकिशोर शास्त्री और माता का नाम चमेली देवी था। १९३१ में अशर्फी देवी के साथ उनका विवाह हुआ।

आपकी प्रारंभिक शिक्षा परासौली के निकट भवनपुरा में हुई। उसके बात मथुरा में सातवी कक्षा तक शिक्षा ग्रहण कर सके। स्वतंत्रता संग्राम के कारण स्कूली शिक्षा समाप्त हो गई। आगे स्वर्गीय नवनीत चतुर्वेदी से पिंगल का ज्ञान अर्जित किया। सेठ कन्हैयालाल पोद्दार से अलंकार व रस-सिद्धांत की शिक्षा ली। नायिका भेद का ज्ञान सैया चाचा से प्राप्त किया। पुरातत्व, मूर्तिकला, चित्रकला डॉ. वासुदेवशरण अग्रवाल से सीखी। डॉ. सत्येन्द्र से विशारद और साहित्यरत्न का अध्ययन किया तथा हिन्दी के नवोन्मेष का पाठ पढा।

आप ब्रजभाषा के कवि, समीक्षक, व्याकरण, साहित्यशास्त्र, रस-नीति-अलंकार, नायिका भेद और पिंगल के मर्मज्ञ थे। आपका प्रथम कार्य क्षेत्र आगरा था। उसके उपरांत वे दिल्ली में आकर बस गए तथा सन १९४५ से मृत्युपर्यंत कर्मस्थल दिल्ली था।

गोपाल प्रसाद व्यास बहुमुखी प्रतिभा के धनी थे। वे एक सफल संपादक और पत्रकार रहे। उन्होंने देश की विभिन्न पत्र-पत्रिकाओं में संपादन व संपादक का कार्य किया। आप पत्रकारिता से जुडे रहे व आपने 'साहित्य संदेश' आगरा, 'दैनिक हिंदुस्तान' दिल्ली, 'राजस्थान पत्रिका' जयपुर, 'सन्मार्ग' कलकत्ता में संपादन तथा दैनिक 'विकासशील भारत' आगरा के प्रधान संपादक के रुप मे कार्य किया। वे १९३७ से अपने जीवन के अंतिम समय तक निरंतर स्तंभ लेखन में संलग्न रहे। उन्होंने हिंदी के प्रचार-प्रसार के लिए विभिन्न साहित्यिक संस्थाओं की स्थापना की और वे उन संस्थाओं के संस्थापक व पदाधिकारी भी रहे। जैसे :- ब्रज साहित्य मंडल मथुरा के संस्थापक और मंत्री से लेकर अध्यक्ष पद पर आसीन रहे। दिल्ली हिंदी साहित्य सम्मेलन के संस्थापक और ३५ वर्षों तक महामंत्री और अंत समय तक संरक्षक रहे।

उनकी सबसे बडी उपलब्धि भारत की राजधानी दिल्ली में हिंदी के प्रचार-प्रसार के लिए 'हिंदी भवन' की स्थापना करना जो उनके बीस वर्षो के अनवरत परिश्रम के बाद राजधानी में हिन्दी भवन की स्थापना की। आप हिंदी भवन न्यास समिति के संस्थापक महामंत्री के पद पर अंत तक रहे। आज उनके द्वारा स्थापित हिंदी भवन, विश्व हिंदी केंद्र के रूप में आकार ग्रहण कर चुका है और अपनी प्रगति की ओर निरंतर बढ़ रहा है।

होली के अवसर पर देश के विभिन्न क्षेत्रो में सामाजिक व साहित्यिक संस्थाएँ हास्य कवि और 'मूर्ख महासम्मेलन' का आयोजन करती है जिसमें हास-परिहास के साथ लोगों को मूर्खराज, महामूर्खाधिराज आदि से विभूषित किया जाता है। ऐसे अनोखे आयोजन का बीजारोपण करने का श्रेय पंडित गोपाल प्रसाद व्यास को जाता है। उन्हें 'मूर्ख महासम्मेलन' का जन्मदाता कहते है। वे ऐसे अनेक कार्यक्रमों के संचालक भी रहे है। लाल किले पर हर वर्ष होने वाले राष्ट्रीय कवि सम्मेलन की शुरुवात में उनकी.अहम भूमिका मानी जाती है।

ऐसे हास्य-विनोद रचनाओं के पुरोधा पंडित गोपाल प्रसाद व्यास जी को हिन्दी साहित्य में दिए गए योगदान व उनके कार्यो के लिए भारत सरकार व भारत की विभिन्न संस्थाओं ने उन्हें समय-समय पर सम्मानित किया।

सन १९६५ में साहित्य और शिक्षा के क्षेत्र में 'पद्मश्री' सम्मान से विभूषित किया, दिल्ली सरकार ने 'शलाका सम्मान' से नवाजा और उत्तरप्रदेश सरकार ने 'यशभारती' सम्मान से सम्मानित किया था। साथ ही उत्तरप्रदेश हिंदी साहित्य सम्मेलन द्वारा राजर्षि पुरुषोत्तम टंडन स्वर्णपदक से विभूषित किया, बंबई की संस्था चकल्लस द्वारा व्यंग्य शिरोमणि की उपाधि प्रदान की गई। हिंदोली पुरस्कार द्वारा हास्य रसावतार की पदवी से सम्मानित किया गया। वृंदावन की ब्रज अकादमी द्वारा ब्रज साहित्य के भीष्म पितामह घोषित

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त्रिलोचन के काव्य में मानव संघर्ष व लोकधर्मिता

डॉ. साधना तिवारी

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[illegible] यथार्थवादी दृष्टि का सबसे ऊँचा स्वर प्रगतिशील [illegible] में उभरकर आता है। यह आधुनिक हिंदी कविता के यथार्थवाद की [illegible] प्रवाह था। सामाजिक यथार्थ की परंपरा को रामविलास [illegible] केदारनाथ अग्रवाल, नागार्जुन और त्रिलोचन ने आगे बढ़ाया यद्यपि [illegible] ने इस युग में ऐसी प्रसिद्ध कविताएँ लिखी है, जिनका [illegible] महत्व है। त्रिलोचन प्रगतिशील काव्यधारा के प्रतिष्ठित लोकधर्मी [illegible] ग्रामीण संवेदना के कवि है। उनके काव्य में लोक के हर्षोल्लास [illegible] सांस्कृतिक छवियाँ तो है ही साथ-साथ लोक अनुभवों का खुरदुरा [illegible] भी है। जिसमें पीड़ा है, टूटन है और उनसे उपजा आक्रोश तथा [illegible] के प्रति विद्रोह भी है।

डॉ. बदायली सिंह ने उनके काव्य-साहित्य पर प्रकाश डालते हुए [illegible] लिखा है- त्रिलोचन शास्त्री ने अपनी कविताओं में स्वानुभूत जीवन [illegible] किया है। अवध के गाँव में पैदा होने वाले इस कवि ने बचपन से ही [illegible] की विषमताओं को नजदीक से जाना है। उसने गाँव की जनता के लिए [illegible] और संस्कृति के बंद द्वार देखे। किशोरावस्था में ही उसे स्वयं अपनी [illegible] को बीच में ही समाप्त कर देना पड़ा। युवावस्था में बहुत दिनों तक दर-[illegible] होकर खायी। परिवार से दूर रहते हुए उसके भीतर परिवार की ममता [illegible] रही। लेकिन बुरे दिनों में वह टूटा नहीं, बल्कि उसका मनोबल और [illegible] रहा। उसने गरीबी और अंधविश्वास के बीच मरती-जीती ग्रामीण [illegible] की मानवता को पहचान और गाँवों से दूर रहते हुए भी उसने मानवता [illegible] अक्षय प्रेरणा के रूप में अपने हृदय में सजोया।'

त्रिलोचन की कविता की जड़ों की शिनाख्त करते हुए युवा कवि [illegible] ने लिखा है- 'लोक में भरी अनवरत उर्जा, प्रतिरोध के तत्व [illegible] जीवन की गतिमयता को त्रिलोचन की कविताओं की रेडिकल [illegible] में देखा जा सकता है। नंदीग्राम एवं दादरी के प्रतिरोध को [illegible] रहे किसानों की निराशा के साथ रखकर अगर हम देखे तो [illegible] त्रिलोचन की कविता का नया अर्थ हमारे लिए खुलता है।"

लोकचेतना से जुड़कर त्रिलोचन जी जीवनधर्मी बिंब तलाशते है। [illegible] भाषा के माध्यम से ग्राम की प्रकृति और लोक संस्कृति, [illegible] का सूक्ष्मता से चित्रण करते है। त्रिलोचन की जनपदीयता गहरे [illegible] नीयता और परिवेश के भूगोल का आख्यान है। वे पूरे आत्म[illegible] कहते है कि पृथ्वी मेरा घर है। अपने इस घर को अच्छी तरह मै [illegible] इस घर में डुब्बी, पाँचू, टिकुल बाबा आदि सब रचे-बसे है। [illegible] जनपद के कवि है, जो भूखा-दूखा है, नंगा है, इसलिए वैचारिक [illegible] व्यवस्था को बदलने के लिए संघर्ष करते है। नगई महरा, फेरू [illegible] कहार, भोरई केवट मरीसे कर्मी लोक चरित्र के भीतर [illegible] है इनकी विशिष्टता को रेखांकित करते है।

इस प्रसंग में [illegible] जोशी का वक्तव्य काफी महत्त्वपूर्ण है - "त्रिलोचन की कविता की [illegible] उसकी बातचीत और भाषा में [illegible] करके रूढ़ शास्त्रीय मापदंडों पर नहीं परखा जा सकता। जीवन की समग्रता और संघर्षों के वह केवल दर्शक नहीं, उसके हिस्सेदार भी रहे है।"

वैसे प्रगतिशील कविता जीवन की समग्रता की कविता है। इस युग की कविता के दायरे में मनुष्य का वैयक्तिक और सामाजिक जीवन [illegible] हुआ है और लोक से [illegible] होकर यथार्थ [illegible] है।" अपनी परंपरा, संस्कृति परंपरा का [illegible] वह केवल मार्क्सवाद से प्रभावित लेखकों का साहित्य नहीं है, [illegible] प्रमाणित होता है कि उसके निर्माण में अनेक [illegible] का मूल्यवान योगदान है, जिसमें वैचारिक असहमतियों के बावजूद अपनी जनता और संस्कृति से गहरी सहानुभूति है।"" प्रगतिशील कवि त्रिलोचन जी के काव्य में दाम्पत्य प्रेम भी बड़ी आत्मीयता से प्रस्तुत हुआ है।

डॉ. नामवर सिंह का मानना है कि "प्रगतिशील कविता में जो स्वस्थ सामाजिक पारिवारिक प्रेम व्यक्त हुआ है, वह प्रयोगवाद के [illegible] और कुंठा भरे काव्य में नहीं मिल सकता है। प्रगतिशील कवि का प्रेम इतना स्वस्थ और स्फूर्तिदायक इसलिए है कि वह प्रेम को सम्पूर्ण जीवन का अंग समझकर अनुभव करता है।" त्रिलोचन अनुभव करते है कि "मुझे जगत जीवन का प्रेमी बना रहा है प्यार तुम्हारा।"

एक अन्य कविता में - उठता है जीवन की पीड़ा/निस्तरण [illegible] क्रीडा/तुमने अनजाने वह पीड़ा/छवि केवल से दूर भगा दी। एक प्रेम कविता 'मेरा घर' संग्रह में देखे, सारा दिन घूमा मै, तुम्हारे साथ, [illegible] तुमने जो देखा, वह मैंने भी देखा, सराहा उसे जो तुम्हे अच्छा लगा [illegible] सन् 1945 में त्रिलोचन जी का प्रथम काव्य संग्रह 'धरती' समीक्षा हेतु मुक्तिबोध के पास आया। मुक्तिबोध को 'धरती' के कवि के रूप में त्रिलोचन काफी संभावनाशील दिखे थे। उनकी कविताओं में मुक्तिबोध को एक साथ अनेक चीजें दिखाई दी जो उन्हें महत्वपूर्ण बनाती है। जैसे - मनोवैज्ञानिक काव्य की प्रधानता, निराशा और दुख की कालिमा से दूर तथा पराजय स्वीकार नहीं करना आदि उनकी प्रमुख विशेषताएँ रही है। इन्हीं विशेषताओं के कारण त्रिलोचन आज भी याद किए जाते है। वास्तव में सात्तर वर्षों की काव्यसाधना में त्रिलोचन जी ने अपने जीवन संघर्षों के समानांतर अनेक रूपों से सामाजिक यथार्थ को चित्रित करने का प्रयास किया तथा इसी क्रम में उन्होंने अनेक

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The Exploitation Of Women During Partition As Reflected In The Film Pinjar

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Abstract:
The partition of India destroyed the social harmony of the Indian subcontinent. Many writers portrayed the sufferings of the victims caught in the web of violence at that time. The aim of both literature and films is the same, to reflect life as it is.Amrita Pritam,an author of great repute wrote the famous novel Pinjar based on the theme of partition and cultural dislocation.The novel was later adapted into a film having the same name by Chandra Prakash Dwivedi.The film created a furore because of the realistic portrayal of the turbulent times of partition.It highlighted the agony of women victims of partition, especially the physical and mental humiliation they underwent.Women were subjected to physical assault, rape,forced change of religion,forced marriage to their abductors, life of drudgery as evident in the life of Pooro.UrmilaMatondkar played the role of Pooro convincingly.SandaliSinha essayed the role of Lajo.The teary- eyed Pooro,the guilt- driven Rashida managed to bring tears to the eyes of the viewers of this historic film.The film Pinjar by Dwivedi amassed many accolades . .The movie was awarded as the Best Feature Film depicting the theme of national integration. This paper attempts to explore the loss of identity, sense of alienation and rootlessness as well as the lifeless existence of partition sufferers as shown in the film through the character of Pooro and Lajo.The present study highlights the theme of women's exploitation during Partition.

Keywords- dislocation, rehabilitation, catastrophic, rootlessness, alienation.

1. INTRODUCTION

In 1947 ,the country got divided into two provinces i.e. India and Pakistan. Partition brought unforeseen misery into the lives of people.The event was aptly called catastrophic because of the tremendous damage it caused.The effects of the great calamity was brought forward by many writers and film makers.One such thought - provoking film was Pinjar made in 2003 by Dr Chandra Prakash Dwivedi.Pritam[1]wrote the original novel from which the film was adapted.The film Pinjar was appreciated all over the world because of superb performances by the lead stars.

Partition of 1947 brought havoc into the lives of countless people as it divided the Indian subcontinent into fragments. The Radcliffe line not only created an insurmountable barrier between India and Pakistan but led to the feelings of hatred on both sides. Perner[2]said precisely in the opening lines of his editorial work, *From Fiction to Film* , "The study of literature casts light on the meanings in the film and the study of the film can illuminate the full value of the literature."The present study explores the women's perspective in the Partition ordeal.The purpose of the research work is to drive home the fact that women are

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17. Issue of Identity in Manju Kapur's 'A Married Woman'

Dr. Jayant Krishnarao Walke
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Male dominance has made the other sex relegate to a mere existence without individuality or independent identity. Woman's role is primarily restricted to providing services to the male and other family members which is at the center of her affairs. Educaion, industrialization, urbanization and politico-economic, cultural and socio-psychological changes in the life patterns and attitudes of the people, especially among the urban population has brought some changes in the life of women. When the woman is educated and working and living in urban areas the boundary between the gender seems to have been blurred. There may be blurring of the boundary of duties but there are two clear vantage points upheld by the male and the female which are biologically, psychologically, socially and culturally ordained. And on closer look, the basic differences still lie and have not reached to a point of progress where a working woman's responsibility at home is reduced to nil. There is a duality of duties to be performed inside as well as outside and her primary duty remains to be at home - inside the house. The woman tries to emancipate herself from the patriarchal domination, physical abuse, sexual harassment and lack of personal freedom that continued to affect her life in spite of laws to the contrary. Although a lot of changes is taking place in today's world the male dominated society still uses a lot of machinery to keep women in bondage. Marriage in Indian context is one such institution.

Though marriage is important both for man and woman yet woman does not enjoy the same freedom as her male counterpart. In Indian patriarchal society man has subjugated woman to his will, used her as a means to promote his selfish gratification, to minister his sensual pleasure and used her as an instrument in providing him comfort. However, with the social and cultural changes in the post-independence India, woman finds herself at the crossroads. Caught between two worlds - one traditional and the other modern - the woman needs to define herself and her place in the society - her marital relationship, her conflicts, psychic and moral dilemmas. Manju Kapur like many other women novelists focuses her attention on woman, her role i

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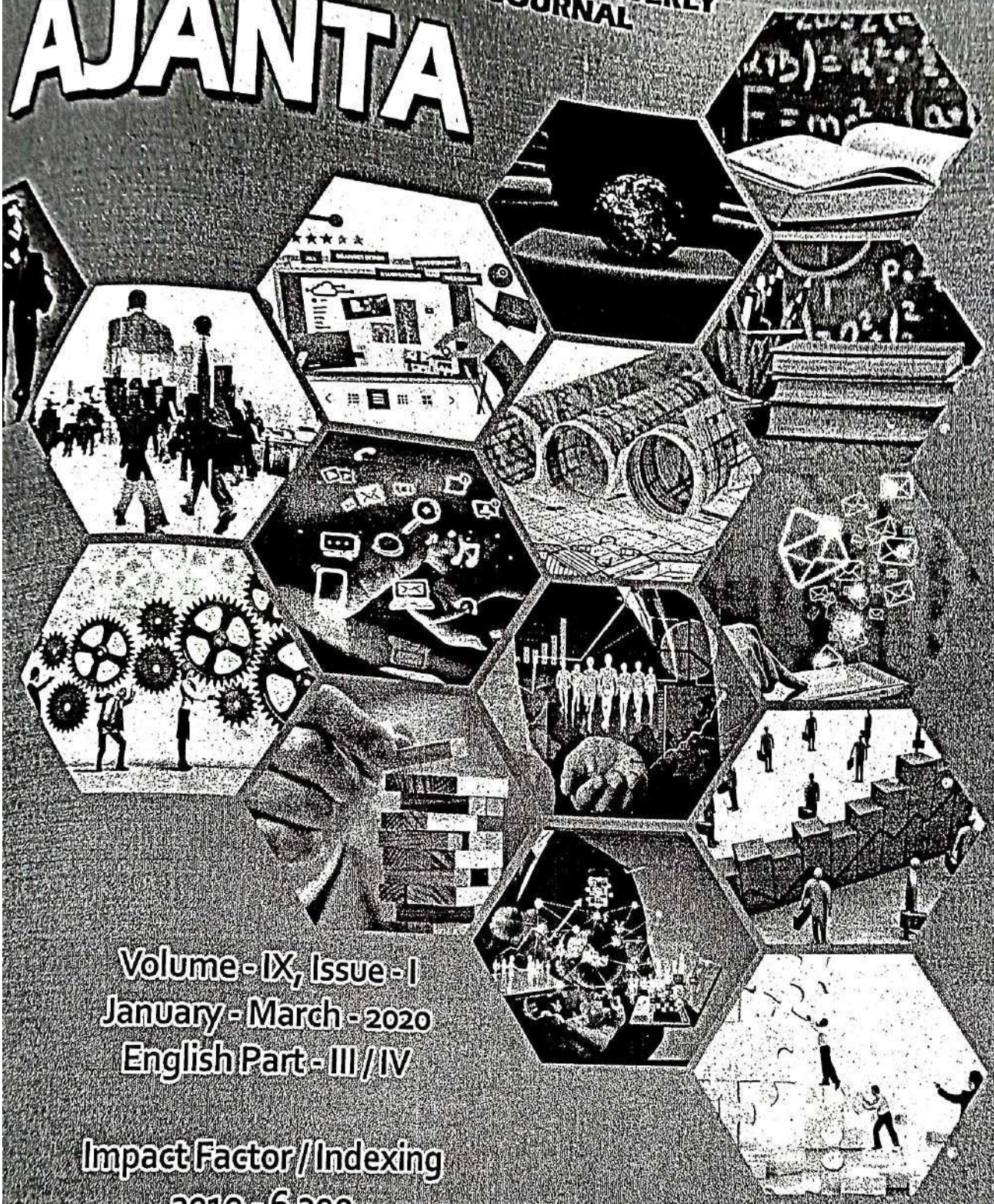

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The Theatre of the Absurd with Special Reference to Samuel Beckett's Waiting for Godot

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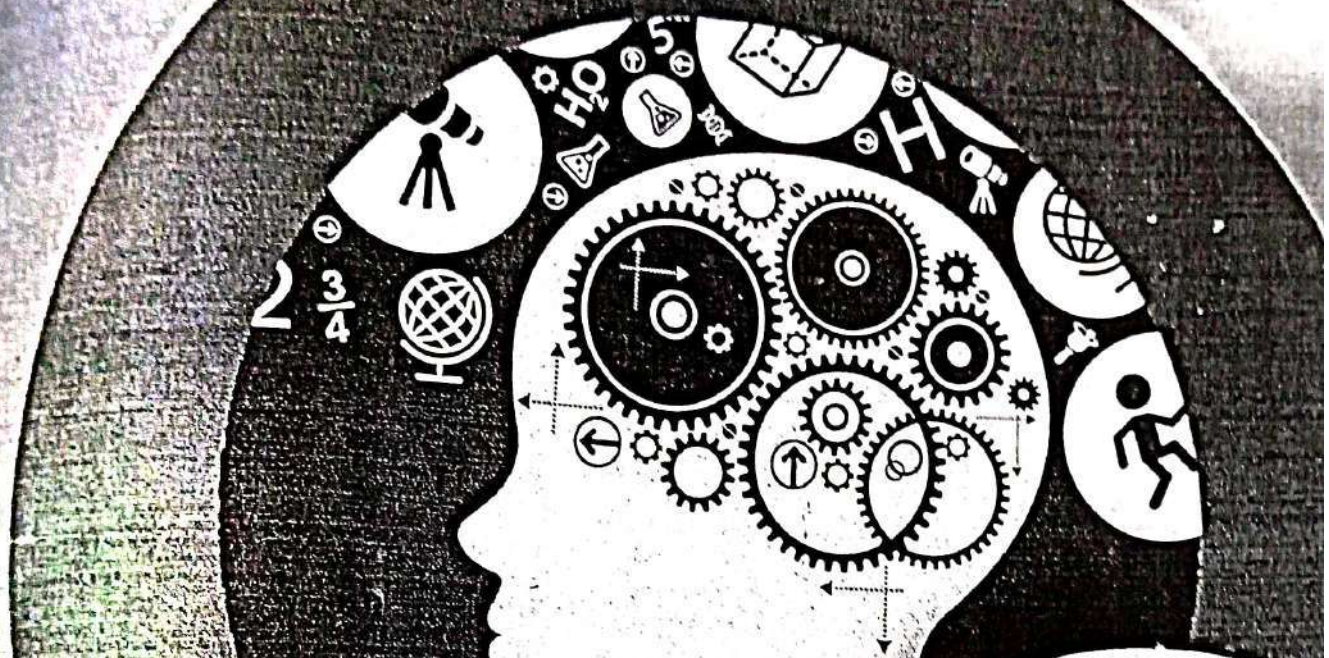

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24. The Theatre of the Absurd with Special ference to Samuel Beckett's Waiting for Godot

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roduction

It is one of the general experiences of human beings to find a world deprived of a fortable and generally accepted vision of life. It appears disjointed, purposeless and absurd d. When we are cut off from religious, metaphysical and transcendental roots, a sense of loss perienced and is inevitable. This metaphysical anguish at the absurdity of human condition derstood to be the theme of the plays of the Absurd movement.

Absurdity has a long history. It can be traced as far back as the Ecclesiastes, the mime ys of antiquity and the commediadell'arte. Even Shakespeare, Goethe and Ibsen are regarded harbingers of theAbsurd. So the whole work of dramatic literature has been a prelude tothe orious emergence of the Theatre of the Absurd.

Anymention of Absurdity involves the collection of essays called 'TheMyth of Sisyphus' Albert Camus who is still most widelyknown as the philosopher of the Absurd. A number of reign playwrights of the 1950's and early 60's living in France and agreeing to the view of bert Camus that the human situation is essentially absurd, gave expression to the post wa ood of the disillusionment and skepticism in their writings. These writers did not belong to an rmal movement but it came to be called "the Theatre of the Absurd".

The term 'The Theatre of the Absurd' was derived from Camus' philosophy of the absu d popularized by Martin Esslin's book 'The Theatre of the Absurd'. Esslin applied the term e work of mainly four French playwrights which appeared on the stage in Paris in the ear 50's starting with Ionesco's 'The Bald Prima Donna'. The other three playwrights included lin were Beckett, Adamov and Genet. Later Absurd writers included Harold Pinter of Brita d Edward Albee of the United States.

ne Absurdist

The absurdist playwrights and novelists believe that our existence is absurd. We are bo ithout asking to be born, we die without seeking death, we live between birth and death trapp ithin our body and our reason, unable to conceive of a time in which we were not or a time

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