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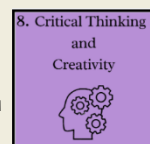
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3.4.3 Research Papers published in UGC Care List Journal


2019




 **Journal of Food Composition and Analysis** 
Volume 87, April 2020, 103396

Original Research Article

Salting-out homogeneous liquid-liquid microextraction for the spectrophotometric determination of iodate in food grade salt

Manju Gupta   Anjali Dsouza

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Highlights

- Rapid and simple method for the determination of iodate in food grade salt.
- Salting out microextraction served to increase the sensitivity of the method.
- Green solvent (2-propanol) is used in the extraction procedure.
- Cu(II) and Fe(III) do not interfere in the determination.
- No pretreatment required for food grade salt samples.

Abstract

A simple and rapid method has been reported for the determination of iodate in food grade salt samples where iodate has been used for the oxidation of phenylhydrazine to phenyldiazonium ion which then couples with 2-naphthol or with 8-hydroxyquinoline to produce orange red azo dye. The dye was extracted with microliter volume of 2-propanol, when the phase separation occurred by addition of ammonium sulphate, a



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Review

Legume lectins: Potential use as a diagnostics and therapeutics against the cancer

[Ajay Kumar Gautam](#)^a, [Divakar Sharma](#)^{b 1} , [Juhi Sharma](#)^c, [Khem Chand Saini](#)^d

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Abstract

Legume lectins are carbohydrate-binding protein and widely distributed in a variety of species of leguminous plants and have drawn increased attention toward cancer. Nowadays, the lectins have been studied for the screening of potential biomarkers which increased its importance in cancer research. Few plant lectins have been shown to destroy cancer cells, suggesting that lectins may have biological potential in cancer treatments. In this review, we present a focused outline of legume lectins in descriptive their complex anti-cancer mechanisms on the bases of their properties of recognition and interacting specifically with carbohydrates binding sites. Existing reports suggested the binding of lectins to cancerous cells with their cell surface markers speculated by histochemistry *in vitro* and *in vivo*. In this review, we illuminate the use of legume lectins as a natural source for diagnostics and therapeutics purpose against cancer.



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Review

Potential strategies for the management of drug-resistant tuberculosis

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ABSTRACT

In the current scenario, the emergence of drug resistance in *Mycobacterium tuberculosis* is the consequence of the failure of conventional diagnostic and treatment approaches. To combat this global emergence of drug resistance, alternative approaches such as pathogen-centric (use of repurposed drugs, novel analogues of existing anti-TB drugs and novel compounds with a different mechanism of action), host-centric (immunomodulatory agents, therapeutic vaccines, immune and cellular therapies) and nano-based drug/vaccine delivery should be used singly or in combination. Diverse types of nano-carriers have assessed as auspicious diagnostic and drug delivery systems. In this focused review, we have suggested a long-term solution for combating antimicrobial resistance and also an attractive means to increase patient compliance and reduce treatment duration.

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1. Introduction

Mycobacterium tuberculosis, a causative agent of tuberculosis (TB), remains one of the world's biggest public health threats. Recently the World Health Organization (WHO) reported 10.4 million new TB cases and 1.8 million deaths annually worldwide [1]. Primary resistance along with poor patient compliance and

inconsistent drug treatment raises the threat of the emergence of TB that is multidrug-resistant (MDR-TB), extensively drug-resistant (XDR-TB) or totally drug-resistant (TDR-TB) [2,3]. The emergence of drug-resistant *M. tuberculosis* strains emphasizes the need for early diagnosis of resistant strains, the search for potential targets of drug resistance, shorter treatment options and effective medical interventions. A number of proteomics and bioinformatics studies exist that suggest potential diagnostic and drug targets against drug resistance [4–13]. To combat this alarming situation of antimicrobial resistance, pathogen-centric (novel diagnostic and chemotherapy agents against the resistant pathogens) as well as host-directed therapeutics (modulating the host immune response to prevent pathogenesis) approaches

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“Fluoride ion Concentration in Ground Water a Major Concern: Pratapgarh District, Uttar Pradesh”

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ABSTRACT: - The physico-chemical study of ground water in Pratapgarh District has been carried out to assess the fluoride ion and ground water quality for drinking and domestic purpose. For this study, nine ground water samples collected from different hand pumps. The pH, TDS, Temperature, Turbidity, Alkalinity, Electrical conductivity, Fluoride ion, Lead ion, DO, BOD and COD parameters are used. This study results show that the fluoride ion level is greater than the standard value in Pratapgarh District ground water. Teeth decay, bone fluorosis and crippling effects are observed in case the concentration of fluoride exceeds 1.0 mg/l.

Keywords: Physico-chemical, Pratapgarh district, Fluoride, ground water quality, parameters, Fluorosis, Concentration.

1. INTRODUCTION:

The Pratapgarh District people live in rural area and use both surface and ground water for survival. The sources of water are river, hand pumps, wells and bore-wells. Mostly the population use hand pumps i.e. ground water for drinking and domestic work. When fluoride quantity is more in water then many diseases affect the human body like as fluorosis, tooth decay etc. The central government started a “fluoride control mission” for defluoridation twenty years earlier. Defluoridation plants were started in different districts in Uttar Pradesh but were unsuccessful. According to newspapers pratapgarh district is affected from fluoride. In the ground water fluoride, lead, arsenic, iron calcium are present. Fluoride concentration is in dangerous level in surface and ground water. Fluoride above 1.5 ppm or mg/l in drinking water causes fluorosis which leads to dental decolorization, decalcification, deformation of bones, stiffening of joints, gastric and nervous disorder.

Khan and Matha^[1] reported that underground drinking water is gradually accumulating pollutants since industrial revolution started. Biswas^[2] stated that depletion of ground water quality and deterioration of quality is mainly due to unsystematic planning. According to the Rastogi and Sinha^[3] underground drinking water of Moradabad is excessively contaminated with manganese and iron metal. Mo Saleem and A. Hussain^[4] observed that the ground water quality of the country requires to be determined in order to evaluate the degree of water treatment before using water for drinking and other purposes. S. Singh and A. Hussain^[5] analyzed that ground water of the Ganga Noida sub-basin area and reported that it needs a degree of treatment before consumption and need to be protected from further contamination. Tiwari, Singh and Mahoo^[6] reported that ground water of more than one-third area of Pratapgarh District is not suitable for drinking. Singh and Tiwari^[7] result show that Pratapgarh District ground water is alkaline in nature. Concentration of TDS, Fluoride ion, and Nitrate ion is exceed the desirable limits in many water samples.

2. LITERATURE SURVEY:-

2.1 THE STUDY AREA:

A survey was done of the five Tehsils in Pratapgarh District – Sadar, Kunda, Lalganj, Pani and Raniganj which include 17 Blocks they are Aspur, Devsara, Babaganj, Baba Belkarnath Dham, Bihar, Gaura, Kalakankar, Kunda, Lalganj ajhara, Lakshmanpur, Mandhata, Mangraura, Patti, Rampur, Sangramgarh, Sadar, Sankha chandrika, Sangjeer and Shivgarh.

Ground water is contaminated with Fluoride, Lead, Arsenic and Nitrate.^[8] Unnav, Raobareli, Firozabad, Mathura and Pratapgarh District has been contaminated with excess quantity of Fluoride in drinking water.^[9] 22 children were examined for fluoride in Primary school Bhikhanpur of Ashpur devsara block. Fluoride was found in 10 children's teeth, 6 children's bone and 3 children's urine. 54 children were affected from fluoride in Primary school udainbahpur.^[10] In the 2017 – 2018 year, 331 water samples taken from different place of Pratapgarh District. Fluoride quantity has been found to be more from standard value in 145 water samples. In the 145 samples, fluoride level was 5- 10 mg/L. In this region 323 children urine test were conducted, and fluoride was detected in 308 urine samples.^[11]



Carbon dots from Guar Gum: Synthesis, characterization and preliminary *in vivo* application in plant cells

S.K. Bajpai^a, A. D'Souza^b, Basharat Suhail^a

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Highlights

- Guar Gum (GG) has been used for the first time as starting carbon source material to prepare fluorescent carbon dots.
- CDs have been characterized via various analytical techniques.
- A preliminary study has been carried out to insert carbon dots into guard cells of *Hibiscus Rosa sinensis* leaf.
- After insertion, cells produce fluorescence due to presence of CDs.

Abstract

In the present work, Guar Gum (GG) has been used as precursor to prepare carbon dots (CD) via microwave assisted synthesis. The carbon dots, as synthesized, were characterized by various analytical techniques such as Fourier Transformation Infra-Red (FTIR) spectroscopy, X-ray diffraction (XRD), Transmission Electron Microscopic (TEM) analysis, UV-Vis spectroscopy, and Fluorescent Microscopy (FM) etc. The TEM analysis revealed that 40% of the particles had diameter in the range of 20–30nm while 15% had



Blue light-emitting carbon dots (CDs) from a milk protein and their interaction with *Spinacia oleracea* leaf cells

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S. K. Bajpai, A. D'Souza & Basharat Suhail

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Abstract

The milk protein casein (Cas) has been employed as carbon resource material to synthesize nitrogen-doped carbon dots (N-CDs) via microwave exposure. The dots, when exposed to UV light, produced blue fluorescence. The N-CDs were characterized by ultra violet (UV) spectroscopy, Fourier transformation infrared spectroscopy, X-ray diffraction (XRD), dynamic light scattering analysis, fluorescent microscopy (FM), and transmission electron microscopy (TEM). The XRD analysis revealed a broad peak at $2\theta = 20^\circ$, thus indicating the turbostratic carbon phase. TEM analysis and particle size distribution curve revealed that nearly, 85% of the particles had diameter below 10 nm and the particles had spherical geometry. The HRTEM analysis revealed that carbon dots exhibited lattice fringes with a d-spacing of 0.21 nm, corresponding to the (100) plane lattice of graphite. The fluorescence spectral studies indicated a red shift in the emission peak from 420 to 450 nm as the excitation wavelength increased from 300 to 340 nm. The zeta potential of particles was found to be -11.3 mV. Finally, impregnation of N-CDs was studied in *Spinacia oleracea* leaf. It was observed that as the concentration of N-CDs' solution increased, percent insertion (PI) also increased, but the time required for maximal insertion decreased with increasing concentrations of N-CDs in the feed solutions. In the carbon dots' solution with a concentration of 200 ppm, maximum percent insertion (MPI) was obtained after 80 min. However, with the increasing concentration of N-CDs in the feed solutions, time of getting MPI reduced, i.e., in 600 ppm, it was 30 min, and in 800 ppm, it was 10 min.

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BIOCHEMICAL EVIDENCES TO ESTABLISH THE POSSIBLE INTERACTION BETWEEN HOST PLANT *OROXYLUM INDICUM* AND ENDOPHYTIC FUNGUS *GEOTRICHUM PSEUDOCANDIDUM*

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ABSTRACT

Oroxylum indicum (L) Vent. is an important medicinal tree possesses numerous metabolites of medicinal value. Nowadays, research is going on to find out role of metabolic activities of endophytic fungi to support the existence of their host. In this series, present paper describes a deep study of various fractions of Plant root and fungal endophyte of root to observe similarities and differences in both type of metabolite fractions. Endophytic fungi *Geotrichum pseudocandidum* isolated and identified from root of *Oroxylum indicum* on PDA medium. Its metabolic extract showing antibacterial activities has been taken and fractionized with Chloroform, Ethyl acetate and n- butanol solvents. The compounds were analyzed by GC-MS technique. The root extracts (methanol and ethanol) from the tree *Oroxylum indicum* was also screened by the same technique and were analyzed. The main components in all fractions of root and metabolites of endophytic fungi were 3-Cyclohexene-1-ol, 4-methyl-1-(1-methylethyl) - (R) also known as Terpinen-4-ol and (-)-5-oxatricyclo (8.2.0.0 (4, 6) and dodecane, 12-TRI which is also known as caryphyllene oxide. The study aims to develop a link between the endophyte and its host plant through biochemical evidences.

KEYWORDS: GC-MS; *Oroxylum indicum*; Endophyte; Host- endophyte interaction.

INTRODUCTION

Endophytes are ubiquitous and have been found in all the species of plants. Many economically important grasses carry fungal endophytes some of which may enhance host growth, may improve the plants ability to tolerate abiotic stress such as drought, as well as improve their resistance to insect and mammalian herbivores (Doty, 2011). Some endophytes protect their host from insect by producing bioactive metabolites (Jalgaonwala, 2010). Recent studies suggest that endophytic fungi are not host specific (Budhiraja, 2013).

Oroxylum indicum (L.) Vent is a small to medium-sized deciduous tree with its distribution in tropical and subtropical regions. It is commonly known by various names such as Indian Trumpet, Indian Calosanthus, Midnight horror etc. Each and every part of *O. indicum* is considered to be useful and is used in several traditional and Ayurvedic folk medicines (Raghu et al., 2013). The plant has anti-cancerous (Mao 2002; Prakash et al., 2013); anti-inflammatory (Doshi et al., 2012); anti-oxidant (Kalaivani and Mathew, 2009; Moirangthem et al., 2013); anti-microbial (Radhika et al., 2011) and anti-arthritis properties (Kamati et al., 2013). The plant contains flavonoids like chrysin, oroxylin, and baicalin as active principal components (Choudhury et al., 2011; Raghu et al., 2013). Besides, a number of other compounds have been reported from different parts of this plant (Deka et al., 2013). The contribution of endophytes to their host plant in showing various beneficial properties cannot be overruled as are evident from literature already cited above. *O. indicum* is not only a potent medicinal plant

with a diverse array of useful phytochemicals but also harbor diverse endophytes (Gu et al., 2006; Gupta et al., 2014; Gokhale et al., 2017).

The link between endophyte and the plant can be established by thorough studies of the metabolites, of the plant and the endophyte both, and thereby the characters expressed by both the entities as individuals and as an interactive unit. In the present study, an attempt was made to study the fungal endophyte *Geotrichum pseudo candidum* associated with roots of *O. indicum* and their metabolite interaction.

To make the study simple and easier the crude extract of the plant and endophyte was fractionated into five fractions. In the five fractions, four compounds were common in the metabolites of root and fungal extract.

MATERIALS AND METHODS

Collection of plant samples

Plant material (roots) were collected from healthy plants growing in the reserve forest area in and around Jabalpur, M.P., India. The samples were collected in sterile polypropylene bags and were processed within 24 hours of collection for isolation of endophytic fungi.

Surface sterilization of plant materials

The collected plant materials were thoroughly washed under running tap water; air dried and then cut into approximately 1 cm long pieces with the help of sterile surgical blade. Surface sterilization was performed aseptically by following the method of Ahmed et al. (2012). Plant materials were sequentially immersed in 70% ethanol (C2H5OH) for 30 sec followed by 5 min in





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 **SHANLAX**
International Journal of Commerce

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A Study of Water Resource Management in Urban and Rural Areas of Jabalpur District

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Dileep Kumar Koshta

Issue: 3

Assistant Professor, Department of Tax Procedure & Practice
Faculty of Commerce, St. Aloysius College (A), Jabalpur, Madhya Pradesh, India

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Abstract

India is rich in natural water resources, but because of the uneven distribution of resources and improper management, the major part of the country suffers from drought almost every year. The present study is based upon the inappropriate management of water resources in the urban and rural area of Jabalpur. The present paper intends to find out the actual condition of management of water resources by the municipal corporation of Jabalpur, whether the citizens of Jabalpur are benefited through the policies made by the government for the equal distribution of water resources, are the policies adequately implemented and monitored once they are made? The data has been collected from secondary and primary sources, and simple percentage method has been used to analyze the collected data. The outcome of the study reveals that the government is trying to manage the water resource and is concentrated on the equal distribution of water in both urban and rural areas. Many policies have been prepared by the local government, but ineffective monitoring is the leading cause of improper management of water resources.

Keywords: Water Resource Management, Government Policies, municipal Corporation, natural water resources.

Introduction

Water has become the scarcest natural resource in the world. The world reports have continuously been warning us about water resources and global warming. Not only India but almost all the countries of the world are facing this difficulty in now and then. Over the past decade, sustainable entrance to water supply has emerged as one of the most critical development challenges facing the developing world. Scarcity of water resources coupled with inequitable distribution and inefficient use and distribution of water has led to a situation wherein a large percentage of the population in urban centers across the country have no access to safe drinking water, and at the same time, vast quantities of water are wasted through leakages and pilferages. Water Demand Management (WDM), which essentially encourages improvements in water distribution and use rather than augmentation of supplies has over the years emerged as an alternative approach to securing access to water supply for everyone on a sustainable basis. This is a micro-study based on problems related to water resource management in the urban and rural area of Jabalpur (Madhya Pradesh). Jabalpur district is located almost in the central part of Madhya Pradesh, and it is the third largest city in the State of Madhya Pradesh having 15% tribal population to the total population of the district. The deposits of the tale around Bheraghat near the Marble rocks on the Narmada River, about 13 miles west



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EFFECT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF BAJAJ AUTO LIMITED

Harshaksh Moolchandani[†]

Dr. N C Tripathi^{**}

ABSTRACT

The present paper studies effect of working capital management on profitability of Bajaj Auto Limited. Automotive industry in India is one of the key sectors of the economy. Due to its deep forward and backward linkages with various other important segments of the economy, the industry acts as a key driver of the economic growth of a nation. The study is based on secondary data from 2008-09 to 2017-18. Data has been analyzed with the help of descriptive statistics such as mean standard deviation, maximum and minimum values; correlation statistics and multiple regression statistics. Return on assets was taken as dependent variable while current ratio, quick ratio, cash turnover ratio, debtor turnover ratio, inventory turnover ratio current assets to total assets ratio working capital turnover ratio were taken as independent variables An econometric model was established and parameters were estimated based on the panel data for Bajaj Auto Limited industry for ten years. The study found that no variable significantly affect profitability of Bajaj Auto Limited.

KEYWORDS: Working Capital, Multiple Regressions, Profitability.

Introduction

Working Capital Management is a part of financial management of a business organization. Effective working capital management enables improvement in the profitability. Working capital is the excess of current assets over current liabilities. The appropriate structure of current assets and current liabilities result optimum use of working capital. It also enables to maintain adequate amount of working capital in a business organization for smooth functioning of business and desired profits.

Automotive industry in India is divided into two main segments viz. Indian automobile industry and Indian auto components industry. Indian automobile industry consists of passenger vehicles segment, commercial vehicles segment, two wheelers segment and three wheelers segment while Indian auto components industry consists of various product segments viz. engine and engine parts, transmission and steering parts, suspension and breaking parts, equipment, electrical parts and other parts like body and chassis, sheet metal parts, fan belts, pressure die castings etc.

Literature Review

Nazir and Afza (2009) tested the factors that determine the working capital requirements by taking a sample of one hundred and thirty two manufacturing firms from fourteen industrial groups that were listed on the Karachi Stock Exchange between the periods from 2004 to 2007. The study found that operating cycle, leverage, return on assets and the Tobin's q influenced working capital significantly. It was also found that working capital management practices are related to industry and different industries are following different working capital practices.

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INTERFERON- γ MESSENGER RNA LEVEL IN PERIPHERAL BLOOD MONONUCLEAR CELLS OF NAIVE BOVINES AFTER FOOT-AND-MOUTH DISEASE VIRUS VACCINATION AND CHALLENGE

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ABSTRACT

The study evaluated the antibody response and interferon-gamma (IFN- γ) messenger ribonucleic acid (mRNA) expression levels in naive bovine calves from a Foot-and-Mouth Disease virus (FMDV) potency test. Peripheral blood mononuclear cells (PBMCs) were separated from blood samples and total RNA was extracted. Two step quantitative (Real time-polymerase chain reaction (RT-PCR) method was used for measurement of IFN- γ specific mRNA. Plasma samples were screened to detect anti-non structural proteins (NSP) antibodies for FMDV in 3AB NSP antibody enzyme linked immunosorbent assay (ELISA). Plasma samples were found free for anti-NSP antibodies for FMDV in vaccinated bovine calves as evaluated in 3AB NSP antibody ELISA test. Increase in mRNA expression level of IFN- γ after 15 days post vaccination (DPV) was found unequivocally in all five vaccinated calves (more than two-fold increase in 4 out of 5 calves). Liquid

phase blocking ELISA (LPBE) test results also revealed highest humoral antibody response on 15 DPV. Monovalent FMDV vaccination elicited highest antibody titre on 15 DPV in correlation with elevated IFN- γ mRNA level. Humoral and cellular immunity both play important role in protection against FMDV. The study will help in further understanding the role played by both the humoral and cellular immune response against FMDV.

Keywords: buffalo, *Bubalus bubalis*, blood mononuclear cells, bovine, Foot-and-Mouth Disease, IFN- γ , immunity

INTRODUCTION

Foot-and-Mouth disease is caused by an Aphthovirus classified in the family *Picornaviridae* which has single stranded positive sense RNA as genomic material. Vaccination

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Improved technique in Tic-Tac-Toe game to minimize the condition of draw using min-max over optimal strategy

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Abstract

In Tic-Tac-Toe game when it is played between two players, one player being the user and another player as the computer, it has been observed by us that applying optimal strategy it usually ends up in a win or draw condition for the first player. In this paper, we have developed a simulation model using min-max algorithm over optimal strategy by giving the players five more moves to change the previous input to minimize the draw scenario and to increase the complexity level of the game.

Keywords: game theory, min-max, optimal strategy, Tic-Tac-Toe.

1. Introduction

Tic-Tac-Toe is a popular game. It is a game of simple rule, and easy to learn. The origin is unknown with indications stated by the ancient Egyptians that they found the Tic-Tac-Toe pattern scribbled on the rocks over more than 3500 years. Later they found fun in using this pattern for playing a game. Then the game became popular being played on wooden board or table or even in a piece of paper.

The Tic-Tac-Toe game involves filling up a 3x3 grid with either crosses ('X') or noughts ('O'). The first player will get maximum of five turns and second player will get maximum



One Dimensional Cutting Stock Problem (1D-CSP): A New approach for Sustainable Trim Loss

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Abstract- Given the stock lengths $U_j, j = 1, 2, \dots, n$, this paper computes the total trim loss of One-dimensional-cutting stock problem (1D-CSP) by considering the cutting plan of at most two order lengths at a time of the required order lengths l_1, l_2, \dots, l_m . The Total Trim Loss (TTL) is computed by fixing a variable t as the percentage of the Pre-Defined Sustainable Trim Loss (PDSTL) on the given stock by the industry.

In view of the past experience, it has been noticed that the trim loss up to 3% is viable for the smooth running of the industry. Hence, we consider 3 as the upper bound of the pre-defined sustainable trim t . Considering the variable $t: 0.5 \leq t \leq 3$ with the stepping of 0.5 as the modal points in the domain, we have first computed the corresponding TTL and plotted these points in the range. With this information, Lagrange Interpolation method has been applied to predict the TTL at any arbitrary point ($0.5 \leq t \leq 3$).

Keywords: Pre-Defined Sustainable Trim Loss, Sustainable Trim Loss, Lagrange interpolation approximation, Total Trim Loss

1 INTRODUCTION

Industries are facing many problems nowadays with focus to 'optimal' solution. One such problem in concern is Cutting Stock Problem (CSP). It is referred as cutting required items from a fixed size called stock of bars, sheets etc. with an aim to minimize the waste of raw material. Therefore the optimization in CSP plays a significant role in the cost-effective functioning of the industries.

Methods of optimization was primarily initiated and proposed by Gilmore and Gomory in 1960, 1963 and 1965 (see [6], [7] and [8]) which was found to be unfeasible due to large number of arrangements of cutting patterns. And later many heuristic methods have been developed with a purpose to minimize the waste. We now consider the current findings in this field.

A process flowchart technique was proposed by Erjavec et al. in 2009 [5] in which the authors compared as-was and as-is states using a simulation model and provided an estimate of the trim loss along with other production costs. In 2010, Alem et al. [1] framed two-stage stochastic nonlinear program in which the objective was to minimize the probable cost acquired at both the stages due to waste and holding of orders. Dikili et al. in 2011 [4] proposed a generalized method for optimization of One-Dimensional Cutting Stock Problem (1DCSP), in which the authors considered the feasible cutting arrangements by eliminating majority of the possible inefficient cutting plans thus rendering the problem solvable for practical applications. Suhman (2012) [12] combined lot sizing with cutting stock problem and

considered lot sizing for each period and then best cutting patterns were generated and also considered available capacity, scheduling periods and purchase cost burden index. CSP with Setup cost was introduced by Mobasher et al. in 2013 [10], in which the authors had considered different cost factors for the material and the number of setups with objective to minimize the total production cost. Araujo et al. (2014) [2] proposed a heuristic method based on the concept of genetic algorithm using randomly and practically generated instances obtained from chemical-fiber company with an aim to minimize the number of objects and the number of different cutting patterns. In 2015 Arenales et al. [3] considers cutting stock / leftover problem (CSLP) in which the stock leftovers are not considered as waste in the current period whereas used to meet the new demands in next period. In 2017 Rodrigo et al. [12] suggested Modified Branch and Bound algorithm for 1DCSP and derived Cartesian coordinate points for the developed algorithm. In 2018 Ibrahim et al. [9] proposed a two stage extension of 1DCSP in which the demands of the order lengths on finished rolls was done through two successive cutting processes, in which stock leftover in the former were used as input for the next cutting plan, with the aim to minimize the number of stock used.

In this paper we have a developed a mathematical model to organize the cutting plan which consists of cutting of at most two order lengths at a time of the required n order lengths l_1, l_2, \dots, l_n from the given m stock U_1, U_2, \dots, U_m . At each stage of cutting, the stock used is checked against the sustainable trim loss



Fortifying The Messages

Mita Darbari, Prashans Darbari, Soumya Nema, Mansi Sahu, Reena Soni

Abstract: In this paper, a method for sending secured messages on internet is presented in a very simple way using Special Pythagorean Triangles.

Index Terms: Code, encryption, legs, Mathematica, message, primitive solutions, Pythagorean Triangles.

1. INTRODUCTION

IN modern times, world is embedded with technologies. In this technological world it is very difficult to secure our messages from hackers. To resolve this problem, we have discovered a new method of cryptography to encrypt our alpha-numeric messages in the form of numbers. Darbari and Darbari [1] have found special Pythagorean Triangles and Darbari and Darbari [2] have given a method of cryptography based on special Pythagorean Triangles whose sum of Two Legs is Undecic. They had found 71 such Triangles and we have extended the number to 245. And we proposed another method for encryption of messages based on these numbers.

2 PROPOSED METHODOLOGY

2.1 Method of Analysis

Pythagorean Triangles have been known since the ancient times. It consists of three positive integers X, Y, Z such that $X^2 + Y^2 = Z^2$ (1)

The triangle is said to be primitive if $\text{gcd}(X, Y, Z) = 1$.

The primitive solutions of the above Pythagorean equation are given by the Euclid's formula [3] -

$$X = p^2 - q^2, Y = 2pq, Z = p^2 + q^2 \quad (2)$$

where $p, q \in I$ such that $p > q > 0$ and $\text{gcd}(p, q) = 1$ where p and q are of opposite parity. Sum of two legs is a power of eleven, that is, undecic: If X and Y are two legs of a right-angled triangle and Z is the hypotenuse, then

$$X + Y = \alpha^{11} \quad (3)$$

$$\text{i.e., } p^2 - q^2 + 2pq = \alpha^{11} \quad (4)$$

2.2 Algorithm

Solving equation (4) using the software Mathematica, by the the command

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Reduce $[p^2 - q^2 + 2pq - \alpha^{11} = 0, \{p, q, \alpha\}]$ the eleven solutions are given by

$$\begin{aligned}
 \alpha &= (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{1/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{2/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{3/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{4/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{5/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{6/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{7/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{8/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{9/11} (p^2 - q^2 + 2pq)^{1/11} \\
 \alpha &= (-1)^{10/11} (p^2 - q^2 + 2pq)^{1/11}
 \end{aligned} \quad (5)$$

Seeking the integral solutions of (5), using Mathematica, by the following command:

$$\begin{aligned}
 [p^2 - q^2 + 2pq - \alpha^{11} = 0 \&\& p < q \&\& 0 < p < 10^{18} \\
 \&\& 0 < q < 10^{18} \&\& 0 < \alpha < 10^{11} \&\& \text{GCD}[p, q] = 1, \\
 \{p, q, \alpha\}, \text{Integers}, 10000]
 \end{aligned}$$

3 APPLICATION IN CRYPTOGRAPHY

Cryptography is a branch of applied mathematics which deals with coding and decoding of personal messages. These messages are unintelligible to everyone except the authorized users. For this we have derived a method.

3.1 Method

In our cryptographic method we have divided the codes in the form of alphabetical blocks as A to Z, then one gap is taken for space between the two words, then taken in the reverse order as Z to A, then again, a gap and the same process continues for seven times. So, we got seven blocks of alphabets. After which we allocated the digits from 0 to 9, and then left a gap. Then we allocated some special characters and left a gap at last.

To allocate the elements, we chose last three digits of p from



Special Pythagorean Triangles with Sum of their Two Legs as Undecic

Mita Darbari, Prashans Darbari

Abstract: Some Special Pythagorean Triangles, where the sum of two legs is undecic, are found. An application of such few triangles is realized in cryptography. Various interesting results are seen.

Keywords: Encryption, Mathematics, Pythagorean triangles, Undecic. **Subject Classification Code:** 11-04, 11D41, 11T71, 11Z05

I. INTRODUCTION

Even after more than two thousand and five hundred years, Pythagoras theorem remains one of the most important theorems in the world today. It is still fascinating the young and old alike towards its beauty and mystic. Darbari and Darbari [2] have obtained special Pythagorean triangles with two consecutive sides and sum of legs to be a square. Darbari and Rana [3] gave Pythagorean triangles with sum of its two legs a decic. It is natural to ponder on the existence of Pythagorean triangles with its sum of two legs to be undecic. Cryptography is in use since the dawn of civilization. In the modern world, with advanced computer technologies, new methods are sought after again and again to make our messages secure. In this direction, an effort is made to find special Pythagorean triangles with sum of its two legs as the eleventh power and to find their application in cryptography.

II. PROPOSED METHODOLOGY

A. Method of Analysis

In the Pythagorean mathematics, primitive solutions of the Pythagorean Equation

$$X^2 + Y^2 = Z^2 \tag{1}$$

is given by [1] as

$$X = m^2 - n^2, Y = 2mn, Z = m^2 + n^2 \tag{2}$$

where $m, n \in \mathbb{I}$ such that $m > n > 0$ and $(m, n) = 1$ with one of them is odd and other is even.

Sum of two legs is a power of eleven, that is, undecic:

If X and Y are two legs of a right angled triangle and Z is the hypotenuse, then

$$X + Y = \beta^{11} \tag{3}$$

$$= m^2 - n^2 + 2mn = \beta^{11} \tag{4}$$

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B. Algorithm
Solving equation (4) using the software Mathematica, by the command
Reduce[m^2-2 m n- n^2 - beta^11==0, {m, n, beta}]
the eleven solutions are given by
 $\beta = (m^2 - n^2 + 2mn)^{1/11}, \beta = (-1)^{1/11}(m^2 - n^2 + 2mn)^{1/11},$
 $\beta = (-1)^{2/11}(m^2 - n^2 + 2mn)^{1/11}, \beta = (-1)^{3/11}(m^2 - n^2 + 2mn)^{1/11},$
 $\beta = (-1)^{4/11}(m^2 - n^2 + 2mn)^{1/11}, \beta = (-1)^{5/11}(m^2 - n^2 + 2mn)^{1/11},$
 $\beta = (-1)^{6/11}(m^2 - n^2 + 2mn)^{1/11}, \beta = (-1)^{7/11}(m^2 - n^2 + 2mn)^{1/11},$
 $\beta = (-1)^{8/11}(m^2 - n^2 + 2mn)^{1/11}, \beta = (-1)^{9/11}(m^2 - n^2 + 2mn)^{1/11},$
 $\beta = (-1)^{10/11}(m^2 - n^2 + 2mn)^{1/11}$ (5)
Seeking the integral solutions of (5), using Mathematica, by the following command:
FindInstance[m^2-n^2+2mn-beta^11==0&&0<m<10^11&&0<n<10^11&&0<beta<10^11&&GCD(m,n)==1, {m, n, beta}, Integers, 10000] (6)
we get only 71 solutions. They are as follows:

Table I- Values of m, n, beta

SN	m	n	beta
1	96100	10077	7
2	9547137	7103	17
3	23287075	7232931	23
4	115030594	8254023	31
5	549402765	318409768	41
6	1197770154	36797381	47
7	1423293413	1034014445	49
8	11009181200	4661084743	71
9	17075423300	253305134	73
10	20971489350	333335330	79
11	37351333025	3293248754	89
12	72796132771	14097411644	97
13	333514109205	75470616331	103
14	142313300797	93492242233	113
15	211297881648	9492938331	119
16	211564939723	33927974233	119
17	34911398382	24836371097	127
18	30301333337	3409738232	137
19	349323333300	137323333343	151
20	992433333399	39934083323	161
21	1337883333139	1439011230	161
22	1548234233998	701333318903	167
23	2333442333876	3929703233993	191
24	2333020812647	2472483733016	193
25	4106333130110	31337919109	199
26	5061133333139	4068047013392	217
27	3774483333475	7133413333368	217
28	333373340748	4833478333399	223
29	7949337483927	3323187913336	233
30	3437394333323	3354331333233	239
31	11236711620671	1534233333392	241
32	1303033707719	330040004836	257
33	14878434833392	10899233133899	269



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Special Pythagorean Triangles And Cryptography

Mita Darbari, Prashans Darbari, Aditi Singh, Jayeshikha Uikey, Mohd Irshad

Abstract— We have found a very interesting result by using some special Pythagorean triangles, where the sum of two legs is undecic. We have used application of these triangles in cryptography to code and decode any message.

Keywords: Pythagorean triangle, cryptography, Mathematica, eleventh power, coding, decoding

1. INTRODUCTION

The Pythagoras theorem is still attracting the minds of young and old alike even after two thousand five hundred years after it was proved rigourously. Darbari and Darbari [1] have found Pythagorean triangles with perimeter to be a sum of three squares with consecutive sides. Darbari and Darbari [2] developed a method for cryptography using special Pythagorean triangles with sum of their two legs as undecic. Using the same Pythagorean triangles, we propose another method for sending secured messages. In today's modern era we know that security is the prime factor that exists in everyone's life.

2. METHODOLOGY

A. METHOD OF ANALYSIS

PQR is a right angled triangle where P, Q are the two legs of triangle and R is the hypotenuse.

$$P^2 + Q^2 = R^2 \quad (1)$$

If we use Pythagorean mathematics then the primitive solutions of the above Pythagorean equation (1) are

$$P = a^2 - b^2, Q = 2ab, R = a^2 + b^2 \quad (2)$$

where a, b belong to I such that a > b > 0 and (a, b) = 1 and a, b are of opposite parity.

Let us take the constraint that sum of two legs of right angle triangle is a power of eleven or undecic.

Let P and Q be the two legs of a right angled triangle and R is the hypotenuse then,

$$P + Q = a^{11} \quad (3)$$

From (2) we get

$$a^2 - b^2 + 2ab = a^{11} \quad (4)$$

B. ALGORITHM

Darbari and Darbari[2], with the help of software Mathematica solved the equation (4), by the command

Reduce[a² - b² + 2ab - a¹¹ == 0, {a, b, α}]

The eleven solutions of (4) are as follows:

$$\alpha = (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{k/11} (a^2 - b^2 + 2ab)^{1/11}$$

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$$\alpha = (-1)^{2/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{3/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{4/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{5/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{6/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{7/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{8/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{9/11} (a^2 - b^2 + 2ab)^{1/11}$$

$$\alpha = (-1)^{10/11} (a^2 - b^2 + 2ab)^{1/11}$$

(5) They also found the integral solutions of equation (5), by using Mathematica, by following command:

FindInstance[a² - b² + 2ab - a¹¹ == 0 && b < a && 0 < a < 10¹⁵ && 0 < b < 10¹⁵ && 0 < a < 10¹⁵ && GCD[a, b] == 1, {a, b, α}, integers, 10000]

(6) The 71 solutions of equation (5) in terms of P, Q, R are obtained by them. We have taken the values of P only for cryptography which are as follows:

TABLE 1: Values of P which satisfy P² + Q² = R² and P + Q = a¹¹

S. No	P
1	1184304355
2	34188843715725
3	58563108665375
4	6419083110764707
5	200458617831831401
6	1112513344934547755
7	962281642682177653
8	120102886349373312351
9	291239176016833405485
10	727312866875079884179
11	311334333591266251329
12	5100539931352673355705
13	1256645672276533572675
14	11654779918272259798565
15	40469877431285024195343
16	40709613613743056930759
17	121413030488163770368915
18	25397484082306306266645
19	697272843691662924908551
20	49590011402164448426417
21	1065512397145520780156595
22	1843562809591901843064821
23	819721431616623209026353
24	8257222815019591708877351
25	16762359579052956117258219
26	9082840418961213254086857
27	30390068536390039106637505
28	13763812516311985529154583
29	48860417003920510798853593
30	76014372332444722655708019



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Fixed Point Theorems Concerning R -contraction in Complete Metric Spaces

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Abstract

In this paper, the notion of R -contraction is defined and some basic results and examples are given. We defined new type contraction namely R -contraction principle and prove a fixed point result for R -contraction which is generalized of multi-valued contraction mapping. One fixed point theorem for R -contraction mapping is proved. $CB(X)$ be the collection of all non-empty closed and bounded subsets of X .

Keywords:

complete metric space,
Hausdorff metric,
multi-valued contraction
mapping,
 R -contraction.

1. Introduction

Hausdorff distance [1], named after Felix Hausdorff, measures the distance between subsets of a metric space. Informally, the Hausdorff distance gives the largest length out of the set of all distances between each point of a set to the closest point of a second set. Given any metric space, we find that the Hausdorff distance defines a metric on the space of all nonempty compact subsets of the metric space. We find that there are many interesting properties of this metric space, which will be our focus in this paper. The first property is that the Hausdorff induced metric space is complete if our original metric space is complete.

In the next section, we provide some definitions and theorems necessary for understanding this paper. We then define the R -contraction in the following section, and examine its

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An Easy Method To Find Squares of 11 To 19 By Vedic Mathematics

Archana Pasari

Department of Mathematics

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Abstract

Squaring a number is something which is frequently used in arithmetic calculations. While it's easy to calculate the square of a single digit number like 5, it's not so easy to calculate the square of any two digit number. The purpose of this paper is to introduce a simple method to calculate the square of the numbers from 11 to 19 in a single step by simple addition and multiplication operation. The method we have introduced is based on the concept of Vedic mathematics.

Introduction

You know that area of the square = side x side (where 'side' means 'the length of a side').

Study the following table.

Side of a square (in cm)	Area of the square (in cm ²)
1	$1 \times 1 = 1 = 1^2$
2	$2 \times 2 = 4 = 2^2$
3	$3 \times 3 = 9 = 3^2$
5	$5 \times 5 = 25 = 5^2$
8	$8 \times 8 = 64 = 8^2$
a	$a \times a = a^2$



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Isolation and Plant Growth Promoting Studies of Endophytic Fungi of Some Forest Plants

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Abstract:

The aims of the present work was to isolate and study fungal endophytes associated with eleven selected forest plants, collected from the district of Jabalpur, Madhya Pradesh. A total of 16 endophytic fungi were isolated from different tissue parts of these plants which were screened for their Plant growth promoting traits namely, IAA, ammonia, Urease production and phosphate solubilisation. Based upon their PGP traits four most potent endophytes were selected for further in vitro plant growth analysis including seed germination assay and effect of culture supernatant on the growth of Vigna sp. The findings of this study indicated that the isolated fungal endophyte identified as Fusarium sp. from Tectona grandis stem can play a crucial function to improve plant growth and could be utilized as biofertilizer or bioagent to establish a sustainable crop production system.

Keywords: Fungal endophytes, Forest plants, Plant growth promoting traits



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Our Heritage

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Study of Workplace Stress Among College Teachers (High Class Educator)

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ABSTRACT

Workplace stress refers to the ongoing or progressing stress an employee experiences due to the responsibilities, conditions, environment or other pressures of the organisation. There are several types of Workplace stress, depending on the individual employees, their job role, the organization culture and more. Workplace stress often stems from unexpected responsibilities and pressure that do not align with a person's knowledge, skills or expectations, inhibition one's ability to cope. The present study was designed to find out the difference between male and female employees on Workplace stress. For this purpose a sample of 100 employees (50 Male and 50 Female) were selected from different organization situated in Jabalpur city. The random sampling technique was adopted for data collection. For assessing Workplace stress of the employees, Workplace stress index was administered. Result revealed that there is no significant difference between Male and Female employee on Workplace stress.

Key Words: Workplace stress, Employee of the organization, Environment,

Introduction

Numerous studies show that job stress is far and away the major source of stress for adults and that it has escalated progressively over the past few decades. Increased levels of job stress as assessed by the perception of having little control but lots of demands have been demonstrated to be associated with increased rates of heart attack, hypertension, and other disorders. The relationship between job stress and heart attacks is so well acknowledged, that any police officer who suffers a coronary event on or off the job is assumed to have a work-related injury and is compensated accordingly.

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Title

Studies of variation of Haematological indices in Various Acute Febrile Illnesses in Jabalpur City

Authors

Dr. Priyanka Sinha
Shirly Beck
Sakshi Soni
NidaAnjum Mayuri Pathak

Abstract

The common causes of acute febrile illnesses (AFI) are Malaria,Jaundic, Dengue ,Polycythemia, Leukocytosis and other miscellaneous diseases. To detect if certain hematological parameters would increase the probability to reach a provisional diagnosis of various acute febrile illnesses and prompt institution of specific therapy. Present prospective study was conducted from January 2019 to April 2019 in the Department of Zoology , St.Aloysious college Autonomous Jabalpur(Madhya Pradesh). Total 20 samples of acute febrile illnesses in age group 18 to 58 years (IPD) of National Hospital,Golbazar ranital jabalpur were included in the study.Hemoglobin (Hb)Red blood cell(RBCs) and White blood cell(WBCs)Other relevant tests wherever required, were done for confirmation of diagnosis. In our study,out of all febrile polycythemia showed highest haemoglobin and jaundice showed lowest haemoglobin polycythemia showed highest red blood cell and jaundice showed lowest red blood cell polycythemia showed highest white blood cell and jaundice showed lowest white blood cell Haematological changes that occurred in infected blood were the significance increase of the level .Haematological investigation is relatively inexpensive and a less technically sophisticated way for parasite detection.

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STUDIES ON DIFFERENTIAL HAEMOCYTE AND TOTAL HAEMOCYTE COUNTS OF INSECTS OF ORDER HYMENOPTERA OF JABALPUR

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Department of zoology

St.Aloysius college Autonomous Jabalpur(Madhya Pradesh)

Abstract Insect immune responses are divided into humoral and cellular responses. Humoral immunity includes the production of antimicrobial peptides, reactive oxygen and nitrogen derivatives, and coagulation and melanization of hemolymph, whereas cellular immunity comprises hemocyte-mediated reactions such as phagocytosis, nodule formation, and encapsulation. During the present study, total haemocyte count assessed for the ants of different sample collecting sites were found to be different. On the comparison of the ants collected from five different sites the THC of ants collected from the construction area were found to be the highest as 103 cells in one drop of haemolymph while that of ants collected from garden were found to be the lowest as 31 cells in one drop of haemolymph. The THC of ants collected from play-ground were found to be 63 cells, from fish-market area 46 cells and from roadside area 47 cells were found in one drop of haemolymph. During the present relative study higher THC values were observed in the ants collected from the construction area and then in the ants collected from play-ground in comparison to ant samples collected from other sites. The density of haemocytes in ants generally depends upon the volume of the haemolymph. The feeding efficiency of the ants increases the haemocyte counts in them.

Key Words:- Insect immune responses, haemocyte, Hymenoptera.

INTRODUCTION

Insect immune responses are divided into humoral and cellular responses. Humoral immunity includes the production of antimicrobial peptides, reactive oxygen and nitrogen derivatives, and coagulation and melanization of hemolymph (Bogdan et al., 2000; Lowen berger, 2001; Buyukguzel et al. 2007), whereas cellular immunity comprises hemocyte-mediated reactions such as phagocytosis, nodule formation, and encapsulation (Lavine and Strand, 2002; Durmuş et al., 2008). Both these systems are influenced by environmental conditions such as starvation, thermal stress, and pesticides (Sharma et al., 2003; Giron-Perez, 2010; Ghasemi et al., 2014).



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Studies on the effect of three agrichemical on the growth of eisenia fetida in earthen pots

Author: **Priyanka Sinha**, Ambika Singh, Sahiba Ansari, Vandana Vishwanathan, Bharat Lodhi and Nikita Bundele

Subject Area: Physical Sciences and Engineering

Abstract:

To assess the toxic effects of three agrichemical on earthworm *Eisenia fetida* to soil supplemented with different concentrations of the examined agrichemical based on the recommended agricultural doses. Their commercial formulations are: Glyphosphate [N-(phosphonomethyl)glycine], Kamdhenu paudh vardhak, Cypermethrin {[Cyan-(3-phenoxyphenyl)methyl]3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropane-1-carboxylate}. The test was conducted in earthen pots. All our findings indicated that *E. fetida* has a higher rate of growth. The effect of high concentration of pesticides effects growth of *E. fetida*. Results indicated that majority of farmers opted for vermiculture due to environmental consciousness, to save the soil health and for the upliftment of their status.

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EFFICACY OF COW URINE AS A PLANT GROWTH ENHANCER AND EVALUATION OF ITS ANTIMICROBIAL ACTIVITY AGAINST AEROMONAS HYDROPHILA

Runa Paul, D. Yadav, +1 author, Anju Singh · Published 2019 · Environmental Science, Agricultural and Food Sciences

TLDR It is concluded that the cow urine possesses antimicrobial activity and also have favorable impact on the production of gourd and brinjal plants.

Abstract Aim Numerous plants and animal origin resources have been reported to have antimicrobial activity and can enhance plant growth also. The present research work was undertaken to investigate the antimicrobial activity of cow urine against gram negative bacteria *Aeromonas hydrophila* and also to determine efficiency of cow urine as a plant growth enhancer. Methods The antimicrobial activity of various concentrations (0, 100, 300, 500, 700 & 1000µl) of fresh cow urine and photo activated urine was determined by spectrophotometric method. The pot culture method was also performed to find out the efficacy of various concentrations of cow urine (0%, 1%, 2%, 3%, 4% & 5%), on growth of gourd and brinjal plants. Each pot containing seeds was watered two times a day with different concentrations of cow urine and the control pots were watered only with tap water. After 25 days' various parameters were determined such as plant height, shoot length, root length, number of leaves and branches to detect the plant progress. Result & Discussion The results indicated that fresh cow urine with highest concentration has better antimicrobial activity as compared to photo activated urine with highest concentration. The effect of cow urine on plant growth was also evaluated with *Lagenaria siceraria* (gourd) and *Solanum melongena* (brinjal) plants, it was seen that plant height, number of leaves and number of branches of gourd and brinjal was increased by increasing the concentration of cow urine and length of time. Conclusion-Thus we concluded that the cow urine possesses antimicrobial activity and also have favorable impact on the production of gourd and brinjal plants. World Journal of Pharmaceutical Research SJIF Impact Factor 8.074 Volume 8, Issue 6, 1555-1562. Research Article ISSN 2277- 7105 Article Received on 21 March 2019, Revised on 11 April 2019, Accepted on 01 May 2019, DOI: 10.20959/wjpr20196-14985 *Corresponding Author Runa Paul Department of Zoology, St. Aloysius' College (Autonomous), Jabalpur, (M. P). Runa et al. World Journal of Pharmaceutical Research www.wjpr.net Vol 8, Issue 6, 2019. 1556



QUANTITATIVE ANALYSIS AND ANTIMICROBIAL ACTIVITIES OF *PHYLLANTHUS EMBLICA* (L) LEAF EXTRACTS AGAINST FISH PATHOGEN *AEROMONAS HYDROPHILA*

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ABSTRACT

The present study has been to assess the qualitative screening of phytochemical constituents and quantitative study of total flavonoid content, total phenol content, total tannin and *in-vitro* antioxidant activity; these were determined by aluminium chloride colorimetric method, Folin-ciocalteu method, and ferric reducing antioxidant power method respectively. The anti-bacterial activity of aqueous leaf extracts of different concentration of (25mg/ml, 50mg/ml, 75mg/ml and 100mg/ml) *Phyllanthus emblica* against *Aeromonas hydrophila* was done by agar well diffusion methods.

Qualitative study reported the presence of tannins, saponins, flavanoids and phenols. Quantitative investigation showed variable amounts of phytochemical constituents such as tannins, flavonoid, and phenol and antioxidant activity in the leaf extract. The most efficient inhibitory activity was examined in higher concentration (100mg/ml) of aqueous extract leaf extracts of *Phyllanthus emblica*.

From the results, the present study indicated that *Phyllanthus emblica* not only contains high amount of phytochemical compounds but showed higher medicinal value. *Phyllanthus emblica* possess powerful antimicrobial activity against *Aeromonas hydrophila* and can be used in various ayurvedic treatments.

Keywords: *Phyllanthus emblica*, phytochemical constituents, Quantitative, Qualitative analysis, *Aeromonas hydrophila*.

1. INTRODUCTION

Medicinal plants and herbs are always being proved to be very significant to the health of the individuals' and societies. In current years, several scientific investigations of traditional herbal remedies for many diseases have been tried out and this has lead in the expansion of alternative drug and therapeutic approaches [1]. Gram negative rod shaped, and facultative intracellular aquatic bacteria *Aeromonas hydrophila* commonly occurs in foods such as fish, poultry, milk and vegetables besides aquatic habitats and is the major causative agent of ulcerative disease syndrome (UDS) in fishes [2].

Medicinal plants serve as source for preparation of various effective therapeutic agents because they are used for protective, promotional and therapeutic applications by over 1.5 million practitioners of traditional medicinal system since past [3]. From time immemorial as important part of human diet; besides boosting the flavor of foods herbs and spices are also known for their preservative and medicinal value [4].

1.1. *Phyllanthus emblica*

Phyllanthus emblica (L) is commonly known as Indian gooseberry *P. emblica* (syn. *Emblica officinalis*) (amla) belongs to family Euphorbiaceae as a potent regenerating herb and has been widely used in therapeutic potentials and as a palatable plant. In Ayurveda all parts of the plant like fruits, leaves, seed, bark, roots and flowers are used for therapeutic purposes, it is reported as a vital dietary source of vitamin C, minerals and amino acids.

In tropical and subtropical parts of the China, India, and Indonesia as well as in Malay Peninsula *Phyllanthus emblica* L grows as a small or moderate size tree with greenish-grey bark and greenish-yellow flowers formed in auxiliary clusters. The leaves are feathery linear oblong with an acute apex and rounded base. The amla fruits are green fleshy, lobes and shining green changes from light yellow to brick red when mature [5].

The major metabolites in *Emblica officinalis* active against bacteria include flavanoids, ascorbic acid, Gallic acid, alkaloids and hydrolysable tannins. In the





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A STUDY OF GENDER DISCRIMINATION IN *TARA* AND *A DOLL'S HOUSE*

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ABSTRACT

"I had two options - one was to be silent and be killed. And the second was to speak up and then be killed. I chose the second one. I decided to speak up."

Malala Yousafzai

Gender inequality acknowledges that men and women are not equal and that gender affects an individual's life. This has been an issue since ages as was portrayed by Henrik Ibsen in the play 'A Doll's House' in the nineteenth-century. The injustice is done only on the term of gender and the play presents the deep rooted patriarchal system in the society. Centuries have passed yet the issue of marginalisation of women has not been uprooted and this harsh reality is exposed by Mahesh Dattani in his play 'Tara'. Even though the mandate for equal rights for men and women is embedded in India's constitution, yet there is an unequal treatment made based on gender. In both the plays, the role of women is stereotyped and is expected to fulfill only the particular roles in which they are cast. A women's existence is suppressed over essence, free will is questioned and freedom of choice is neglected. Women act as a key in the hands of patriarchy to perpetuate patriarchal values. This paper tries to compare the mindset of an Indian society and an Norwegian culture and how things have remained static over decades. There has been a tendency of treating the individuals based on their sex. This paper is an attempt to study the gender discrimination and how there is an emergence of New Women.

Keywords: Gender, Discrimination, Marginalisation, Stereotype , New Women

Mahesh Dattani is one of the most influential playwrights writing in English today. Through his more than half a dozen plays he has given fresh insight and vision to the Indian English Drama. The Sahitya Academy honoured him with its award for his contribution to Indian Drama in 1998. He has tackled various contemporary socio-political issues like human relationships, communalism, child sexual abuse, homosexuality etc in his plays. Due to his treatment of tangled human relationships and moral choice, his plays are always praised and described as the classic world drama. On the other hand, Henrik Ibsen, a Norwegian playwright, theatre director and poet was one of the founders of Modernism in theatre and is referred to as the 'Father of Realism'. He is frequently cited as the most influential playwright of the early 20th century. His work is considered as controversial and inspiring.



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FEMINISM AND FEMININE MENTAL HEALTH: A PSYCHOANALYTICAL STUDY IN THE WORKS SHASHI DESHPANDE

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ABSTRACT

*It is a known fact that women are neither inferior nor superior human beings, but one-half of the human race. Women (and men as well) should not be straitjacketed into roles that wrap their personalities, but should have options available to them. When nature was conferring gifts on humans, it did not differentiate between them for the single purpose of procreation. Lack of opportunities and inferior status for no reasonable cause can have deleterious effect on feminine psychic health. This paper attempts examining the feminist perspectives of Indian families, with an insight into Shashi Deshpande's novels, *The Dark Holds No Terrors* and *That Long Silence*, that munch upon the spiritual and emotional well-being of the female protagonists. Subjugation and subordination of women are the flagpoles that show the trumpeting of feminist theories across the world. India, is no new in this regard. The development of sexual sadism in the male chauvinistic society as seen in the first novel and then the loneliness and acute depression seen in the second are analysed from the viewpoint that affects female health and lifestyle in this country. Also, Shashi Deshpande's views on her feminist approaches in her novels are hereby dealt with.*

Keywords: Feminism, Mental Health, Psychoanalysis, Familial Problems.

Introduction

The term 'feminism' originated from the Latin word 'femina' which means 'woman'. Feminism in some context refers to the advocacy of women's rights, status and power at par with men on the grounds of 'equality of sexes'. In other words, it relates to the belief that woman should have the same social, economic and political rights as men. Simone De Beauvoir came out with a bold manifesto for a frontal attack on the patriarchal hegemony in our society. In her famous piece of work *The Second Sex*, she has like a intense non-conformist, hit hard at the male dominated customs and conventions, art and culture, philosophy and religion which have always assigned woman the secondary or rather slavish position to men. As a contemporary author, Shashi Deshpande presents a realistic picture of

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The Book of Life: Swami Vivekananda's Guide to Purposeful Living and Spiritual Growth into the 21st Century and Beyond

Dr. Soma Guha Das

- A Research Article

"Swami Vivekananda harmonized the East and the West, Religion and Science, Past and Present. And that is why he is great. Our country men have gained unprecedented Self respect, Self reliance and Self assertion from his teachings."

- Subhash Chandra Bose

Every generation has its conundrums, enigmas, dilemmas and angst particular to its times. This is genuinely pointed by the elder generations to their faulty cultural, religious and even moral orientation. This invariably leads to widening of the much touted generation gap. Torn asunder between Social correctness as espoused by elders and premises of peer groups the "Millineals" as they are now called, find themselves rudderless, adrift even astray. This may result in distrust of systems and procedures, which manifests itself as recess to drugs, alcohol and even crime proving their general aversion to order and discipline. The socio-political milieu, characterized by poor academic norms, unemployment, caste politics, nepotism, inefficiency, fragile family fabric, over dependence on technology etc. further fuel the crisis and add to the cobwebs already clogging the minds.

India is a land where ethics, spirituality, psychology, philosophy and education are meant to be intertwined to secure the aim of self realization, is paradoxically the land where relationships are turning brittle, contractual, relative and temporary. The youth of a nation where Truth has been the keyword, a part of the national motto 'Satyameva jayate' is brimming with falsehood, fraud and dishonesty. Today in spite of the outward penapliarnelia and enhanced techniques, the students are faced with a sense of inner crisis and seething discontent. The root cause that leaves a void is the fast erosion of ethical values which have gained a new urgency in the context of population explosion, scientific revolution and fierce competitions. For centuries India has been producing great personalities who were deeply religious and who have influenced the national life profoundly from Rama, Krishna and Buddha in ancient times to Ramkrishna Vivekananda and Aurobindo in the modern times, there has been a long procession of leading luminaries. Today in the midst of the full co blaze of our political independence, we recall with pride and reverence the hallowed memory Swami Vivekananda who occupies a unique place in the shining galaxy of the illustrious sons of modern India. India, then under the political regime of British rule was passing through a welter of cultural ideals as a result of the influx of occidental thought. A silent

process of intellectual, social and economic exploitation was depleting the vitality of the ruled. In such a backdrop Swami Vivekananda stepped in as a mighty challenge to the ideology of the West. At his Clarion call, the slumbering population was forced to rethink. The rest of the world also could not escape the overmastering influence of his life-giving message.

Vivekananda appeared on the scene when India had lost its self-confidence and was struggling to regain its identity. The Philosophy of Vedanta followed and preached by Swamiji has been evolved from the Upanishads which occur at the end of the Vedas. It demonstrates the essential unity of all religions recognizing them as different paths to one destination. It accepts all the great prophets, teachers and sons of God, for it holds that all are the manifestation of One Godhead and accepting all it does not aim to convert.

We often hear that our present decadence is due to our religion but Swami Vivekananda opines that it is because of our not following religion in its true sense. Swami Vivekananda under the stewardship of his guru declared to the doubting thousands who were influenced by modern scientific thought that God was a reality that could be realized by the right method. This removed all the doubts and objections of the scientific world. He harmoniously united in himself faith and reason, religion and science, ethos of the East and the West, as well as ancient and modern culture. Every faculty of human mind – be it intellectual, emotional or active found their fullest expression in his grand personality. He is to the present age the epitome of all that is describable for modern humankind. Perhaps that is why his spiritual guru Shri Ramakrishna called him 'Nara', man. It is therefore no wonder that such a gigantic personality and his thoughts should exert a powerful influence on society both during his lifetime and centuries later.

A rare capacity to stay in the transcendental plane and work in the physical, marked Swamiji. Christina Albens says, "One single man changed the current of thought of half the globe"(Forward iv). The uniqueness of Swami Vivekananda is that the Swami combines spirituality with one's duties and responsibilities to one's fellow beings. As Swami Vivekananda observed, we are like men walking over a gold mine, thinking we are poor – the analogy is very true for 21st century too. He was a multifaceted personality whose emotions, words and deeds exhibited a profound harmony. . He was a pragmatic transcendentalist who



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RELATIONSHIP BETWEEN CLAIM SETTLEMENT AND GROWTH OF LIFE INSURANCE COMPANIES IN INDIA

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Abstract

Life insurance is taken by people to insure the risk borne by loss of life. Although it covers the risk of death but it is also an important source of investment and tax saving for people. Claim settlement is a key and decisive factor for customers while buying a life insurance policy. When a person buys a life insurance policy the two main factors considered are claim settlement process and claim settlement ratio. Comparison among life insurance companies claim settlement and premiums is done to find the best suitable life insurance product. The major source of income for life insurance companies are policy premiums and the sale of policies can be largely affected if the claims are not properly settled. There can be two cases when the claims of life insurance policies are filed, firstly at the time of maturity and secondly at the time of death/disability. The study focuses on the claim settlement ratio 2018-19 of top five life insurance companies in India. The insurance companies undertaken in this study are TATA AIA life insurance, HDFC life insurance, MAX life insurance, ICICI Prudential life insurance and life insurance Corporation of India (LIC). Out of these five companies LIC is a public sector company while the other four are private life insurance companies. It is essential to have an easy and quick claim settlement procedure because the demand for life insurance is increase, so also the number of claims to be settled is also on increase. The analysis shows that there is positive correlation between the claim settlement ratio and the new business premium collected by life insurance companies. Also the companies are ranked on the basis of their performances in claim settlement and new business premium and it is clear that LIC is ranked highest in both the parameters followed by ICICI and HDFC Life Insurance Company.

Keywords:- Life Insurance, Insurance Regulatory and Development Authority of India (IRDAI), Public and Private Life Insurance companies, Annual Reports and Claim Settlement.

Introduction

Life Insurance is a tool to cover the lives of individual from unforeseen risks of death and disability. While buying a life insurance policy the customer usually compares life insurance companies based on various products, premiums to be paid, claim settlement ratio, ease of claim settlement and benefits of the policy. There are total 24 life insurance companies in India with one public life insurance company and 23 private life insurance companies. Earlier only Life Insurance Corporation of India (LIC) was selling life insurance policies, but in 2000-01 the Indian market was liberalised and private players entered the market. The insurance market is regulated by Insurance Regulatory and Development Authority of India (IRDAI) which was constituted in 1999 and incorporated in 2000. The mission of IRDAI is "to protect the interest of the policyholders, to regulate, promote and ensure orderly growth of the insurance industry and for matters connected therewith or incidental thereto".¹ Claim settlement is the integral part of any insurance business, and the growth of companies depends on the people, the customers and the consumers of services. The maturity of life insurance policies arise in two conditions-

- If the policy holder has survived till the end of the policy term, and
- Due to death or disability.

The policy holder or nominee has to file the claim so that the money is provided to them by the life insurance company. Once the claim is filed the insurance company will assess it and based on their assessment of the condition under which claim is made, they may or may not approve it. Claim settlement process involves many channels, systems and processes. Filing a claim is the only way through which the insurance benefit can be taken, but until it is approved by the insurance company it remains a claim and not a pay-out.

The objective of the study is to analyse the growth in new business premium of life insurance companies, to analyse the claim settlement ratio of selected Life Insurance Companies and to understand the relationship between claim settlement ratio and new business premium of selected Life Insurance Companies. The study is based on secondary data. The data was collected from various sources which include the IRDAI annual reports, IRDAI handbook Indian Insurance, The Economic Times and Journal of Insurance Institute of India. The companies selected are the top five life insurance companies based on their claim settlement ratios for the year 2018-19 according to IRDAI annual reports, they are TATA AIA life insurance, HDFC life insurance, MAX life insurance, ICICI Prudential life insurance and life insurance Corporation of India (LIC). The study analyses data using

¹ www.irdai.gov.in



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यर्ड जेण्डर की चुनौतियां

विश्वास पटेल*
तुहिना जौहरी*

सामाजिक संरचना की शास्त्रीय अवधारणा स्त्री एवं पुरुष को ही सामान्य तौर पर विमर्श का आधार मानती आई है लेकिन विमर्श की इस कड़ी में लैंगिक विभाजन के बीच एक महीन लकीर पर गुमनाम सा जीवन व्यतीत कर रही एक आबादी विमर्श की इस प्रक्रिया से सदैव दूर रहकर आप्रासंगिक बनी रही है। जनसंख्या और लैंगिक विभेद के आधार पर पुरुष वर्ग को आधी दुनिया और शेष वर्ग को आधी दुनिया मान लेना न ही न्यायोचित है और न ही प्रासंगिक है। भारतीय संदर्भ में अगर इस लैंगिक विभेद को समझने का प्रयास किया जाय तो स्त्री एवं पुरुष के साथ ही हाशिए के समाज के रूप में किन्नरों की संख्या भी लाखों में है।

भारत में सामाजिक सहभागिता के दृष्टिकोण से भी किन्नर सामाजिक मुख्यधारा के न तो विषय समझे जाते रहे हैं और न ही तथाकथित सम्य समाज ने उन्हें कभी मुख्यधारा में समायोजित करने का प्रयास किया। ऐसा प्रतीत होता है कि कहीं न कहीं किन्नरों के प्रति सामाजिक और संवैधानिक रूप से दोहरा रवैया अपनाया जाता रहा है। इसी कारण से आजादी के बाद बहुत लम्बे समय तक किन्नरों को मताधिकार प्राप्त नहीं था और इसी वजह से लोकतांत्रिक रूप से सत्ता में उनकी भागीदारी नहीं थी जो कि संवैधानिक संवेदनहीनता का उल्लेखनीय उदाहरण माना जा सकता है। कालांतर में परिवर्तन उस समय दृष्टिगोचर हुआ जब 1996 में तत्कालीन मुख्य चुनाव आयुक्त टी.एन. शेषन द्वारा किन्नरों को मत प्रयोग करने और अपना प्रतिनिधि चुनने का अधिकार दिया गया जो कि किन्नर समाज के लिए एक बहुत बड़ा फ़ैसला था। इस फ़ैसले ने किन्नरों के लिए राजनीतिक सहभागिता के द्वार खोल दिए और उनमें परिणामस्वरूप राजनीतिक चेतना का भाव जागृत हुआ। यही कारण है कि आज नगरनिगम पार्षद से लेकर विधायक आदि के चुनाव में किन्नर समाज ने अपनी उल्लेखनीय उपस्थिति दर्ज करानी आरंभ कर दी है।

सामाजिक स्थिति

भारतीय संदर्भ में किन्नरों का उल्लेख प्राचीनकाल से ही मिलता रहा है। इनकी उपस्थिति वैदिक काल से मानी जा सकती है जिन्हें वैदिक और पौराणिक साहित्य में किन्नरों प्रकृति या नपुंसक वर्ग के रूप में संबोधित किया गया है। रामायण और महाभारत में किन्नरों के अस्तित्व की जानकारी मिलती है। महाभारत में वृहन्नल्ला का प्रसंग वस्तुतः एक किन्नर के रूप में ही आता है। इसी तरह रामायण में भी श्री राम के द्वारा किन्नर से प्रसन्न होकर उसे किसी को भी आशीर्वाद या श्राप देने की शक्ति प्रदान की थी। ऐसा ही संदर्भ मध्यकालीन भारतीय इतिहास में भी मिलता है। जहां किन्नर मुगल प्रशासन का हिस्सा हुआ करते थे। अकबर के शासन काल में किन्नर समुदाय को सभी महिलाओं की रक्षा की जिम्मेदारी दी गई थी जो कि बेहद सम्मान की बात थी। इस काल में किन्नर सामाजिक रूप से स्वीकार्य थे।

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Mukt Shabd Journal

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INDO-ASEAN Trade Potentials Role of WTO

Dr.Rupali Ahluwalia and Dr.Sonal Rai

Abstract

The Potentials of India ASEAN trade have been methodically explored and analysed. The relationship between India and ASEAN have been presented covering a multifaceted approach. The relationship in terms of agreements, trade in goods and trade in services have been discussed. At the outset the results of the Trade Intensity Index shows that there is a strong intensity of trade between India and ASEAN members. Further the revealed comparative advantage in trade in goods and trade in services have helped to identify the key and advantageous areas of trade between the ASEAN member nations and India. Thus the trade between India and ASEAN is certainly advantageous and can create a WIN-WIN situation for both the sides and for the Asian region. At this junction an important factor for consideration is how can the WTO and its multilateral trading regime influence or have a bearing on the relationship between India and ASEAN.

Key words : ASEAN, India, Trade ,WTO and Trade Relations

Introduction & Methodology

The role of WTO in Indo-ASEAN trade is also the central theme of the study. In this line the nature and trend of India and ASEAN trade in the pre WTO and post WTO era shall be seen to find out the impact of WTO ruling on regional trade. The study in this context shall move ahead with the hypothesis that trade has increased in the post WTO era.

H₀ = Trade has increased in the post WTO era

H₁ = Trade has declined in the post WTO era

The pre WTO period shall be shown from 1980 to 1994 and post WTO shall be shown from 1995 to 2009 and from 2010-2014. The data has been collected from UN-COMTRADE Statistics Division at 1 digit SITC (Standard International Trade Classification) Rev. 2 for the period 1980-2014. Alternative sources of data are : IMF –

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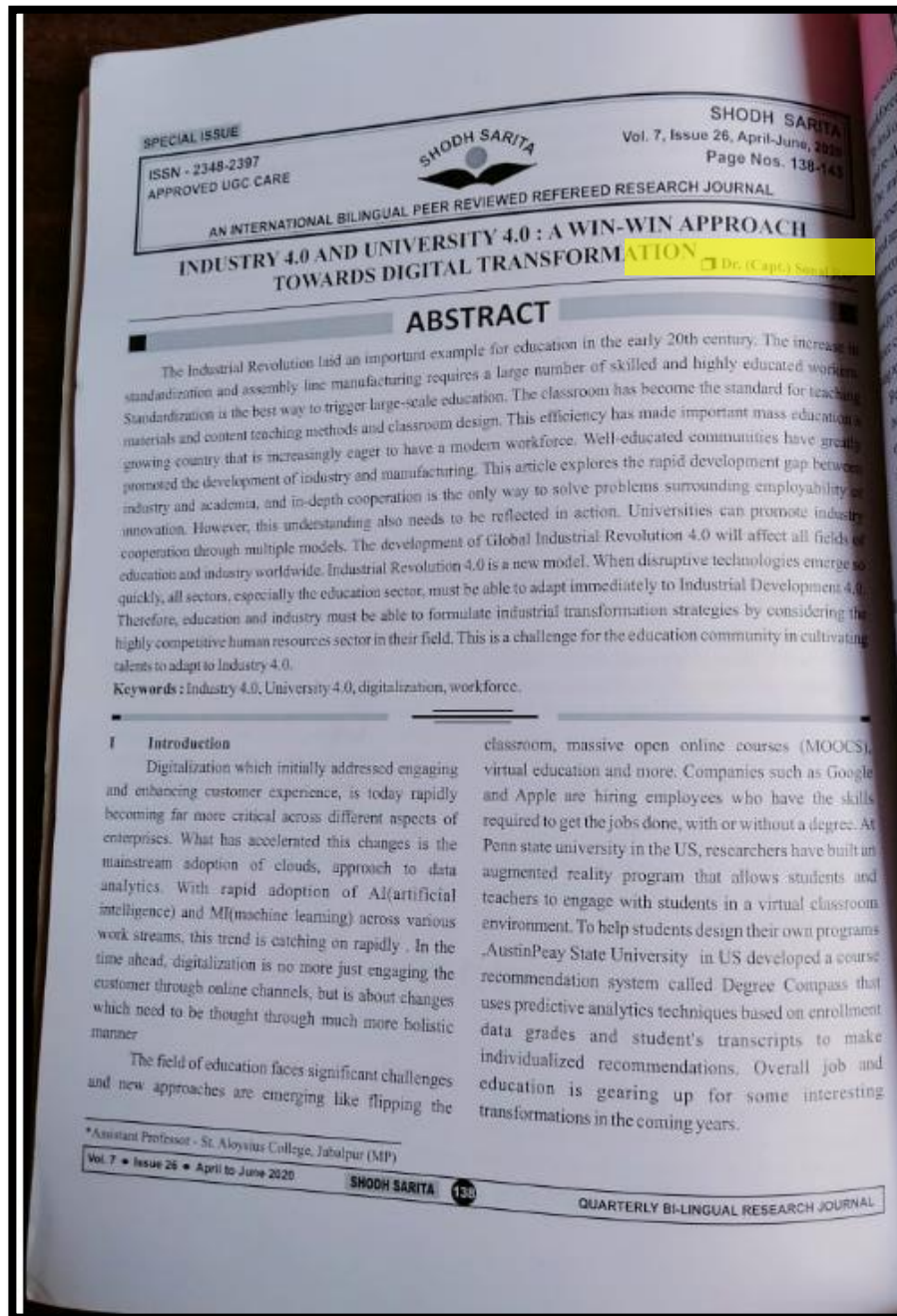
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AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

INDUSTRY 4.0 AND UNIVERSITY 4.0 : A WIN-WIN APPROACH TOWARDS DIGITAL TRANSFORMATION

Dr. (Capt.) Sarita

ABSTRACT

The Industrial Revolution laid an important example for education in the early 20th century. The increase in standardization and assembly line manufacturing requires a large number of skilled and highly educated workers. Standardization is the best way to trigger large-scale education. The classroom has become the standard for teaching materials and content teaching methods and classroom design. This efficiency has made important mass education in a growing country that is increasingly eager to have a modern workforce. Well-educated communities have greatly promoted the development of industry and manufacturing. This article explores the rapid development gap between industry and academia, and in-depth cooperation is the only way to solve problems surrounding employability and innovation. However, this understanding also needs to be reflected in action. Universities can promote industry cooperation through multiple models. The development of Global Industrial Revolution 4.0 will affect all fields of education and industry worldwide. Industrial Revolution 4.0 is a new model. When disruptive technologies emerge so quickly, all sectors, especially the education sector, must be able to adapt immediately to Industrial Development 4.0. Therefore, education and industry must be able to formulate industrial transformation strategies by considering the highly competitive human resources sector in their field. This is a challenge for the education community in cultivating talents to adapt to Industry 4.0.

Keywords : Industry 4.0, University 4.0, digitalization, workforce.

I Introduction

Digitalization which initially addressed engaging and enhancing customer experience, is today rapidly becoming far more critical across different aspects of enterprises. What has accelerated this changes is the mainstream adoption of clouds, approach to data analytics. With rapid adoption of AI (artificial intelligence) and ML (machine learning) across various work streams, this trend is catching on rapidly. In the time ahead, digitalization is no more just engaging the customer through online channels, but is about changes which need to be thought through much more holistic manner.

The field of education faces significant challenges and new approaches are emerging like flipping the

classroom, massive open online courses (MOOCs), virtual education and more. Companies such as Google and Apple are hiring employees who have the skills required to get the jobs done, with or without a degree. At Penn state university in the US, researchers have built an augmented reality program that allows students and teachers to engage with students in a virtual classroom environment. To help students design their own programs, Austin Peay State University in US developed a course recommendation system called Degree Compass that uses predictive analytics techniques based on enrollment data, grades and student's transcripts to make individualized recommendations. Overall job and education is gearing up for some interesting transformations in the coming years.

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भारतीय अर्थव्यवस्था में चुनौतियाँ एवं सम्भावनाएं : कोविड-19 के विषेय सन्दर्भ में

डॉ. सुनील कुमार तिवारी

सहायक प्राध्यापक वाणिज्य विभाग

संत अलौयसियस महाविद्यालय स्वसौंसी, जबलपुर, मध्यप्रदेश, भारत

संक्षेप:

वर्ष 2020 के प्रारम्भ से कोरोना महामारी ने ना केवल भारत बल्कि सम्पूर्ण विश्व की अर्थव्यवस्था की रफ्तार में ब्रेक लगा दिया। भारत में दवा व्यवसाय एवं कृषि उत्पाद को छोड़कर शेष अन्य सभी व्यवसाय जैसे पर्यटन व्यवसाय, होटल व्यवसाय, उत्पादक उद्योग आदि सभी व्यवसायों में दिन प्रतिदिन कमी होती जा रही है। कोविड-19 के दौरान भारत में व्यापार और आर्थिक मंदी के वर्तमान परिदृश्य को प्रस्तुत कर रहा है। अंतर्राष्ट्रीय व्यापार पर कोविड-19 का प्रभाव सोने के बाजार की असंगति, शेयर बाजार में मंदी, औद्योगिक प्रगति और भारतीय अर्थव्यवस्था में कमी हो रही है। लोगों की सामाजिक गड़बड़ी एवं अवरोधों को पुलिस, स्वास्थ्य, दूरसंचार, मेडिकल और अन्य सेवा विभागों के प्रयासों से कड़े हालातों को सफल बनाने में मदद मिल रही है। भारतीय सरकार के द्वारा किये गये प्रयासों जैसे- आत्मनिर्भर भारत, मेक इन इंडिया और स्वदेशी उत्पाद आदि के माध्यम से शीघ्र ही अर्थव्यवस्था को तेजी से विकास के पथ पर अग्रसर होने में मदद मिलेगी।

यह अध्ययन वर्तमान स्थिति एवं संभावित प्रभावों से समस्याओं, सम्भावनाओं तथा अवसरों को दर्शाता है। यह संक्रमण देश, समाज, व्यापार, उद्योग और भारतीय अर्थव्यवस्था में समग्र रूप से प्रभाव डालेगा। इससे भारतीय जी.डी.पी. में भी कमी करेगा। हालांकि इस महामारी के केवल नकारात्मक पहलू ही नहीं है बल्कि इसके अनेक सकारात्मक प्रभाव भी उत्पन्न होंगे जो नये रोजगार के अवसर, कृषि का विकास, शिक्षा हेतु नई तकनीक, नौकरी के नये पैटर्न आदि से प्राप्त होंगे। दुनिया में कोरोना के बाद उन युवा देश का महत्व बढ़ेगा, जिनके पास नई तकनीक के साथ विशेषज्ञता होगी। इसके मद्देनजर भारतीय युवा बहुत आगे दिख रहे हैं। हाल ही में प्रकाशित प्रशिद्ध कंसलटेंसी फर्म केपीएमजी के 2020 ग्लोबल टेक्नोलॉजी इंडस्ट्री प्रकाशित इनोवेशन सर्वे के मुताबिक आर्टिफिशियल इंटेलिजेंस, मशीन लर्निंग, ब्लाकचेन इंटरनेट ऑफ थिंग्स में नई खोजों और अनुसंधान के मामले में भारत दुनिया में चीन के साथ दूसरे नम्बर पर है। यह भी स्पष्ट दिखाई दे रहा है कि इस समय कोविड 19 के संकट के बीच देश की जहां नई पीढ़ी जहां भारतीय अर्थव्यवस्था को सभालते हुए दिखाई दे रही है, वहीं अपनी आउटसोर्सिंग की ताकत के बल पर बर्क प्रॉम होम के तहत दुनिया की कई कंपनियों को मदद करते भी नजर आ रही है।

संकेत शब्द: कोविड-19, जी.डी.पी., अर्थव्यवस्था, सम्भावनाएं, अवसर, चुनौतियाँ

प्रस्तावना-

विश्व स्वास्थ्य संगठन द्वारा दिये गये आंकड़ों के आधार पर विगत कुछ वर्षों में भारतीय अर्थव्यवस्था धीरे-धीरे प्रगति के पथ पर अग्रसर हो रही थी परन्तु वर्ष 2020 के प्रारम्भ से कोरोना महामारी ने ना केवल भारत बल्कि सम्पूर्ण विश्व की

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Presidency Journal of Management Thought & Research

An Effect of Advertising on Women Buying Behaviour

Nidhi Khurana*

Abstract

Advertising is a paid form of communication to persuade the demand of customers as they demand different commodities based on their tastes and preferences. Consumers play a very important role in the economic system of any nation. With the increase in technological advancement, effective advertising has become extremely important to be able to have a competitive advantage, hence the need for this study arises. This study examined the effect of advertising on women consumer buying behavior by tapping the responses of 200 women respondents residing in urban areas of Jabalpur city. The basic objective of this research is to assess the role of T.V ads in buying decisions of women and to know the effect of advertisement on urban working and non-working women buying behavior by focusing on readymade apparel. It involves the collection of data from women respondents through the questionnaire to test the hypothesis. A chi-square test was used to test the hypothesis. The research findings show that there is a significant difference in the sources of knowing the latest trend in readymade garment among urban working and non-working women. There is no significant difference in the effect of advertisements on working and non-working women buying behavior and there is a significant difference in the changed perception towards apparel because of some aspects of television ad on urban working and non-working women.

Introduction

The evolution of advertisement dates back to ancient times. Societies used symbols, and pictorial signs to attract their product users. Over the centuries, these elements were used for the promotion of products. At an early age, these were handmade and were produced at a limited scale for promotions. Later on, this phenomenon gained strength more intensively for promotional purposes.

Today's modern environment, advertisements have become one of the major sources of the communicational tool between the manufacturer and the user of the products. A company cannot make a dream to be a well-known brand until they invest in their promotional activities, for which consumer market has been dominating through advertisements. As the primary mission of advertisers is to reach prospective customers and influence their awareness, attitudes and buying behavior. They spend a lot of money to keep the individual's interest in their products.

About the Author

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T ECHNICAL ARTICLE

Educators' online buying behavior: A step towards knowledge management with special reference to higher education institutions in Jabalpur city

Komal Kawai and Meenakshi Swamy

Department of Commerce, St. Aloysius' College, Jabalpur

Abstract

Educators are facilitators of student learning and creators of productive classroom environments. The building of education doesn't need any brick and mortar but requires a comprehensive structure of collective human knowledge. Nowadays online shopping of educational material has become new trend of shopping and is rapidly becoming an imperative part of life. The objective of this paper is to unearth the buying behavior of educators for different products and know their stream wise preference towards online shopping in Jabalpur city.

Keywords: Educator, Buying behavior, Online shopping, Knowledge management

Introduction

In the present era it has been observed that there is a tremendous growth in the internet based network of free online teaching resources which assist teaching and learning process. These resources are called teaching and learning objects, open education material or online learning resources in which innovative and interactive curricula can be designed. Educator is a person who provides education and inspires learners for a systematic knowledge. Educators are the facilitator of learning and impart knowledge, develop the powers of reasoning and judgment among the learners. Educators are buying online of educational material towards the melioration of learners. They create their own Google class room teaching, lesson plan, video lectures and as well as various tools such as visualization and simulation that support the manipulation of real world phenomena. These materials are often used and it made available in resource collection such as like digital library, portals that facilitate educator access, free online book material that benefitted the educators

as well as learners. The present paper highlights the aspect of knowledge management which is basically related to the educators who shop online of teaching material. The online resources are very supportive to enhance and share knowledge in various ways that fundamentally transform into practice.

Buying behavior

Buying behavior is a response of consumers towards a product which includes planning, acts, strategies and decision for a product. It consists of all activities, preference, attitude and intentions related to purchase of a product. Nowadays educators are motivating towards buying of educational material online which helps them to make the learning environment more fruitful.

Online shopping

The act of purchasing products directly over the internet by using any web browser is known as online shopping. It is

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Operation on Fine Topology

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Abstract. This paper introduces the concept of an operation γ on τ_f . Using this operation, we define the concept of f_γ -open sets, and study some of their related notions. Also, we introduce the concept of $f_\gamma g$ -closed sets and then study some of its properties. Moreover, we introduce and investigate some types of f_γ -separation axioms and $f_\gamma \beta$ -continuous functions by utilizing the operation γ on τ_f . Finally, some basic properties of functions with f_β -closed graphs have been obtained.

2010 Mathematics Subject Classifications: 54A05, 54A10, 54C05, 54C10, 54D10

Key Words and Phrases: Fine-open sets, f_γ -open sets, $f_\gamma g$ -closed sets, f_γ -separation axioms, $f_\gamma \beta$ -continuous functions, f_β -closed graphs

1. Introduction

Kasahara [11] introduced the notion of an α operation approaches on a class τ of sets and studied the concept of α -continuous functions with α -closed graphs and α -compact spaces. After this, Jankovic [10] introduced the concept of α -closure of a set in X via α -operation and investigated further characterizations of function with α -closed graph. Later, Ogata [12] defined and studied the concept of γ -open sets, and applied it to investigate operation-functions and operation-separation axioms. Asaad et al. [7] introduced the notion of γ -extremally disconnected spaces. Asaad et al. [5] studied further characterizations of γ -extremally disconnected spaces and investigated some relations of functions of γ -extremally disconnected spaces. Asaad [4] defined a γ operation on generalized open sets in X and studied its applications. In 2017-2018, Ahmad and Asaad ([1], [6]) introduced an operation γ on semi generalized open subsets of X and discussed some types of separation axioms, functions and closed spaces with respect to γ . Recently, Asaad and Ameen [8] introduced an operation on $g\alpha$ -open sets and studied some of its properties. On

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A Review On Research Areas In Educational Data Mining And Learning Analytics

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Abstract: Over the last two-decade or so, educational data mining has evolved as an emerging discipline to analyze the type of data that comes from academics. Several research studies has carried out Intelligent Tutoring System (ITS), Difficulty Factor Assessments, Latent Knowledge Estimation, Knowledge Inferences, Recommender System and Social Network Analysis. Gathering evidence of learning from educational setup has laid the foundation of learning analytics and educational data mining. Bayesian Knowledge Tracing (BKT), Q-Metrics, Performance Factor Analysis and Latent Knowledge Estimation methods are useful for the study of student's success. Other methods like matrix factorization and knowledge components are suited for analyzing the student's knowledge and performance. On the other hand, knowledge engineering and clustering is useful to develop student models for educational software. The current scope of research areas and methods utilized in educational data mining and learning analytics has discussed in this paper.

Keywords: Educational Data Mining, Learning Analytics

1. BACKGROUND STUDY

EDM is becoming an increasingly important area of research that is apparent through the number of publications on educational data mining in recent times. Two handbooks [1] [2] has published exclusively for EDM research. There are also review papers published in these two areas of research. The first is a review from 1995 to 2005 [3] that classified the EDM research according to data mining techniques used. Second review [4] was improvement over the first. In this, the classification done by the type of data used and based on educational categories defined in [3]. A review of educational data mining regarding clustering algorithms, applicability in educational data mining and their usability [5]. Other present reviews on the classification of tools used in EDM according to the task they perform [6].

2. SOURCES OF DATA FOR RESEARCH IN EDM

Sources of data includes log files, educational computer based systems, student enrollment data, online classes, discussion forum, standardized test and intelligent tutoring systems. Popular websites that provides educational dataset include PSLC, DataShop, Peerwise Learning Environment, DataZoo, Github and MOOCs. Although computational and statistical techniques are, necessary but they are not sufficient to advance a scientific domain. Then we need some basic understanding of teaching and learning process and requirement of the stakeholder involved in the process such as teachers, students and parents.

Machine learning and data mining techniques provide us expertise in working with massive data. Data mining is a step in the overall KDD (Knowledge Discovery with Database) process that contains preprocessing, data mining and post processing. Data mining is already successful in many domains [7] and now showing practical results in mining educational processes.

Popular Platform of Educational Data Mining

1. DataShop
2. Peerwise
3. RIPPLE (Recommendation in Personalized Peer Learning Environment)

TABLE 1: PREVIOUS WORK ON EDM USING DIFFERENT PLATFORMS

S.No.	Platform	Reference	Purpose
1	DataShop	[17]	Showed improvement in cognitive models with difficulty factor assessment.
2	PeerWise	[8]	Showed a comparison of PeerWise and Moodle, and found that PeerWise to be more effective in promoting interaction than Moodle.

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Present Education System in India: A Challenging Priority in the Society

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ABSTRACT

Education in India has gone under many issues some are personal, social, conditional and political during the long period of time. Education is the base infrastructural, in the development of Indian Economy and in living standards as it creates Human Capital directly. Human capital is an intangible asset or quality not listed on a company's balance sheet. It can be classified as the economic value of a worker's experience and skills. This includes assets like education, training, intelligence, skills, health, and other things employers' value such as loyalty and punctuality. There are also positive moves to it but resulted in insufficient efforts or towards wrong directions. It is due to which education still very far from reaching to the common citizens in the country. Worlds and nation also introduced some of the new methods and techniques of education which is good for new generation for better understanding of the subject but still many peoples of the nation are not getting any benefits of these due to different reasons. But there is still some hope for the better improvement in the quality and equality of educational policies among the society and which can provide society with the educated and well settled human capital which can contribute to the economy in greater ways.

Keywords: Human capital, Economy, Education, Development, Human, Society

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Introduction

Education is an important indicator of human development. In ancient times, the student was given knowledge of only those tasks which he could use in the time ahead. Therefore, from childhood, education was based on a special education system. In India, general subjects are taught to students up to secondary or higher secondary classes. After that, they choose the subject according to their interest and proceed to the same subject. ¹ Rabindranath Tagore had long ago accepted about Indian education that this education system needs improvement. We live in a society where parents spend part of their earnings on their child's education, yet they are not getting standard education due to which they must struggle to get employment. ² Increased competition sometimes crushes the creativity of millions of people in the education sector. Today education is considered one of the means of wealth. There is a need to think again about reforming our education system.

The mode and the way the education policies are made and implemented in the education system is not up to the mark, despite of allocating the big part of the budget in the same. There is difference in the educational subject matter according to their status, or background although it is very essential equally to all, hence this becomes the base of the economic class differentiation in forthcoming future for them and which might become the major reason of poverty in the nation.

The education in India seems to encourage the non updated learning instead of Research and development and upward trends. There is the disparity in assessment in all the State Boards because they have different standards of evaluation

¹ Mohit Kumar, "Study of Past and Present education System in India", International Journal of Physical and Social Sciences, Volume 2, Issue 8, ISSN: 2249-5894, August 2012.



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Stakeholder's role in governance and administration in Higher Education Institutions

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Abstract: Any Educational Institution is required to clearly define its Mission, Vision and Goals (MVG). NAAC also has its own MVG to improve the quality of the Higher Educational Institutions. The Mission, Vision and Goals are achieved if all the stakeholders of the institution work in accordance to each other. Therefore stakeholders play an important role in any institution. This paper discusses the various responsibilities of stakeholders in governance and administration of an Educational Institution.

Keywords: Stakeholders, Educational Institutions, Governance, Administration.

1. Introduction

Stakeholders are the people or an organization that has the ability to influence the MVG of Higher Educational Institution. Stakeholders are powerful information source and these information's can be utilized for HEIs development. List of Stakeholders includes Internal Stakeholders and External Stakeholders. The self-evaluation process and the subsequent preparation of the Self Study Report (SSR) to be submitted to NAAC involves the participation of all the stakeholders – management, faculty members, administrative staff, students, parents, employers, community and alumni [2]. HEIs need to cater the needs of all Stakeholders who come from different community and location. Once the needs and expectations of stakeholders are identified, and they are placed within the activities of the HEI, it is easy to plan resources and capabilities as well as establish the priorities [3]. Internal stakeholder's ownership and credibility provides new initiatives and bridges the gap with external stakeholders who support in institutions development process and services. Quality assurance is a challenge because the groups of quality assurance audits and institutional accreditations evaluate the stakeholder relations and the service to society [1]. By including stakeholders in HEI activities we can find the ways for development and improvement of HEI. Therefore we need to define the role of stakeholders at various stages of quality enhancement. The following section of this paper describes each stakeholder in detail through which we can understand the role of individual stakeholder.

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