Criteria 3.3.2

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PHYTOCHEMICAL SCREENING OF SOME MEDICINAL HERBS USED BY PREGNANT WOMEN IN GARHWAL HIMALAYA, UTTARAKHAND, INDIA

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Abstract- Medicinal plants are widely used as a remedy for different diseases among pregnant women worldwide. There are several medicinal plants used by pregnant women in Garhwal Himalaya depending on the culture and knowledge of these medicinal plants. A cross sectional study was carried out on 135 women in Districts Chamoli and Rudraprayag of Garhwal region from September 2015 to March 2016. Medicinal plants used by pregnant women were identified, documented and phytochemical analysis of were made and effects were studied comparing with the available literature. The phytochemicals analyzed in the herbs were saponins, alkaloids, flavonoids, reducing compounds, phenols and steroids which were found to exist in some medicinal plants with varying intensities. Herbal medicines contain important phytochemicals which if standardized and the dosages prescribed could present therapeutic advantages to the users.
Keywords: Pregnancy, Traditional birth attendants, medicinal plants, Phytochemicals.

1 INTRODUCTION

The use of medicinal plants for treatment of ailments continues to increase though interventions to improve health care have been put in place. WHO reports 80% usage of herbal medicines worldwide (WHO 2015) with higher percentages reported in developing countries. The prevalence of use is equally traced in developed countries where health care facilities are in place and up to date for example in the USA (Stephen 2008). In Africa, the prevalence of use of herbal medicine was estimated at 80% (Shewamene et al. 2015). A large population of pregnant women uses herbal medicines for ailments like gastro intestinal disorders, nausea and vomiting, inducing labor and infections. Herbal medicines are extracts of naturally occurring plants which may be taken in its crude or in processed form without any form of prescription or dosage, exclusively made from plants and is administered in different forms of solution, boiled or powdery form. In developed countries like China, herbal medicines are taken as decoctions or as granules. The extracts are of defined parts of the plants which include floral parts, areal parts or the whole plant. Preparation of these herbs usually is by steaming, roasting, boiling or extracting their juice by squeezing or by pounding (Bhatt and Vashishtha 2008).

The most commonly used herbs in Iran are *Ammi visnaga* for Nausea and Vomitingand gastro intestinal problems, and heart burn, *Oreganum syriaca* for nausea and vomiting, *Mentha piperita* for gastrointestinal problems, *Matricaria chamomilla* for relaxation and *Glycyrrhiza glaba* for common colds (Midwifery Department Islamic Azad University 2010). In a clinical trial, ginger was found to treat prenatal nausea and vomiting (Pongrojpaw et. al. 2007). A randomized controlled trials which were conducted about the efficacy of ginger showed a significant improvement in the severity of both nausea and vomiting of pregnancy among the experimental group compared tothose that were taking a placebo (Vutyavanich et al. 2001;Maggie et al. 2014). Gingerols and 6-shagoal a poly phenolic component was found to inhibit the action of neurotransmitter acetylcholine and increase gastric motility which greatly reduces nausea, vomiting and abdominal pain (Viljoen 2014). Fischer Rasmussen found it particularly effective for hyperemesis gravidarum a condition characterized by severe nausea, vomiting, weight loss and electrolyte disturbance common in about 3% of the pregnant women, when compared to placebo. Some herbal medicines like *Zingiber officinale* were used for morning sickness and short term use of *Echinacea angustifolia* for colds and flu in pregnant women (Shewamene et al. 2015).

Different cultures use different herbal medicines as remedies for particular illnesses during pregnancy mostly during the third trimester (Laelago

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RELIGIOUS PLANTS OF YAMUNA VALLEY OF UTTARKASHI DISTRICT

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Abstract- Plants provide food, medicine, energy, shelter, fodder, fruit, fertilizers, fibre. Wood and non-wood products to sustain life on earth. Uttarakhand also known as DEVBHOOMI, one of the Himalayan states of India, is richest in resources with respect to the occurrence of religious and spiritual plants. These plants are utilized by ethnic societies of Uttarkashi district to their religious activities and are also important as food, fodder and medicine. We have identified a total of 40 plant species belonging to 26 families utilized traditionally by ethnic societies of Yamuna Valley of Uttarkashi district during various religious and spiritual ceremonies.
Keywords: Religious, Spiritual, Plants, Uttarakhand, Ethnic, Societies.

1 INTRODUCTION

The Hindu religion believes that the world is governed by super natural power that play various roles of construction *(Brahma)*, continuation *(Vishnu)* and destruction *(Shiva)*. Many of the major deities have a number of different forms, requiring ritual worship at different times and in different ways (Deep, 1982). According to traditional belief, *sodash sanskar* (Sixteen in numbers) must be completed before acting as a human being and all activities in this *sanskar* demand the use of plants and their products for example all most all Hindus and ethnic groups cremate their dead in prescribed manner (Bista,1987),

The people of Uttarakhand are keeping the high religious reverence on plants since time immemorial because this state is popularly known as "Land of Gods" (Devbhoomi) that consisted of Garhwal and Kumaun. Religious practices or ceremonies are performed on various auspicious occasions to seek blessing of Gods. Various plants and their products that are being used by human in Havan (Kumar et al., 2007) and other religious activities like Katha, Vrat, festivals, Pathpuja, Pitrasharadha ceremonies. It is believed that people of ancient time were healthier as compared to modern people because of their way of life in harmony with natural surroundings. Illnesses or medical disorders were thought to be curses by god, goddess and evil spirits. So the treatment frequently involved prescription of herbal drugs accompanied by religious practices like fasting, worshiping to purify evil spirits.

All Hindu families have to perform pujas (religious rituals) on certain occasions and is itself partially responsible for procuring the ritual objects necessary for them (Pohle, 1990). These could be daily puja, seasonal, monthly, annual, periodic and occasional. There is no religious ritual that does not require plants and their products. Traditional Hindu Books such as Ramayana, Mahabharata, Vedas, all put intention to preserve forest as a part of the cultural heritage. An attempt has been made to return to the sources of traditional cultural value in order to record and document the treasure of knowledge that still exist with different caste and ethnic community. Recently, few ethno-botanical studies on some community have been conducted. However, these attempts have ignored detailed study on religious and spiritual values of plants in heterogeneous Hindu dominated Indian society particularly Uttarakhand that gives higher social recognition on it. Therefore, this paper attempts to investigate and document religious and spiritual values of plant species in Yamuna valley in Uttarkashi district of Uttarakhand state. In the present study, the description of religious plants is based on survey and discussion with local users (ethnic societies) of Uttarkashi district.

1.1 Objectives of Present Study

The objectives of present study are to bring out the knowledge of religious and spiritual plants used by ethnic societies of Uttarkashi district and to document it for

3.	Dr. Shailendra Kumar Singh	

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Human Dignity: In Reference to Tagore's Binodini

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Abstract
Tagore was one of the greatest humanists of India and the world, his novel Binodini stress the need for the promotion of Catholicism in human relations and dealings and prevention of the erosion of human dignity while creating conditions for the realization of self-realization, if not self-fulfillment. This is especially true of his women characters that are shown as struggling against their dehumanization in the name of tradition. Tagore infect assigns a central place to women in his novels because their rote is crucial to any transformation of India ethos.

Tagore was one of the greatest humanists of India and the world. He held that humanism which places man in the centre of things was as much a legacy of Indian tradition as it was a gift of the European impact. The European impact on Indian, providing the intellectual climate for the emergence of the novel by fostering a sprite of humanism individuation and self analysis.In the course of his masterly analysis of interwar literature, B. Igor Evans says: further comments that "In spite of many difference this 'exploration of the individual personality and promotion of Catholicism in human relations are the common link which unites Tagore with the English novelist of (Twentieth century)".[2] Human relations and dealings and prevention of the erosion of human dignity while creating conditions for the realization of self-realization, if not self-fulfillment. This is especially true of his women characters that are shown as struggling against their dehumanization in the name of tradition. Tagore infect assigns a central place to women in his novels because their rote is crucial to any transformation of India ethos.

Tagore's *Binodini* is the first major novel. It has rightly received much attention from critics, "its examination of the plight of young widows in Hindu society through the larger perspective of their self-actualization"[3], "emerges as a non conformist, ready to expose social conservatism"[4], in his exploration of the so-called redemptive choices which the Hindu ethos seems to offer to widows. Aware of the consequence of dispossession, depersonalization, and even dehumanization which widowhood had come to spell in Indian society, Tagore seem to suggest the amelioration of their lot does not lie merely in remarriage but also in creating conditions for the harmonious realization of their personality or selfhood. It is in this light that "Bondini's extraordinary act of will in rejecting remarriage as a possible solution to her predicament has to be viewed. Rather than consenting to a socially unacceptable marriage, she seeks, through the dynamics of self-affirmation, a more meaningful role for her rich personality, acquiring thus grandeur"[5].Tagore's rendering of Binodini's trials and tribulations gains in verisimilitude by his avoidance of taking sides on the issues raised by her predicament and the use of natural omniscient narrative framework. A perceptive evaluation of the novel has to take into account the transition from her initial acceptance of traditional norms enjoined upon the Hindu widow to her revolt against them and her final self-abnegation. An attempt will be made to analyze Binodini's crises and the denouement as an archetypal image of the plight of a young Hindu widow.

The protagonist of the novel Binodini is beautiful, accomplished, and tutored by an English missionary lady; her marriage cannot be performed as her father did not leave sufficient money for a dowry. Her hand is offered to Mahendra, the son of Rajlakshmi am old friend of her mother's who, after initial acceptance, backs out because he feels he is being rushed into arranged marriage. As she is already past the traditional marriageable age, Binodini is hurriedly married of to a cousin of Rajlakshmi's "Whose only claim to distinction was his

4.	Dr. Shailendra Kumar Singh	

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The Home and the World : Tagore's Assessment of Swadeshi Movement

Dr. Shailendra Kumar Singh*

Abstract

Tagore Actively supported the Sawadeshi Movement by starting a Swadeshi Bhandar and composing a number of national songs, leading processions and raising funds for funding National schools. But he withdrew from it when the Swadeshi Movement assumed the form of mere political agitation producing extreme reaction. Tagore explains the reasons for his withdrawal from the Swadeshi agitation which appeared to him to have degenerated into a negative campaign of hatred and exclusiveness. So, in a sense, The Home and the World may be regarded as Tagore's assessment of the Movement in fictional form.

Broad based and united protest against the partition of Bengal (1905), the Movement was conceived, as the expression "Swadeshi", Tagore actively supported the Movement by starting a Swadeshi Bhandar in Calcutta for the promotion of indigenous goods as early as 1897 and by composing a number of national song, leading processions and raising funds for funding National schools. But Tagore withdrew from it when the Swadeshi Movement assumed the form of a mere political agitation producing extreme reaction. From the serene surroundings of Santiniketan, he watched with anguish and havoc being wrought by intemperate nationalism : the burning of much - needed cloth in the name of boycott of foreign goods and the alienating of Muslims by introducing Hindu religious motives in the struggle.

Tagore explained the reasons for his withdrawal from the Swadeshi agitation which appeared to him to have degenerated into a negative campaign of hatred and exclusiveness, in one of his letters to C.F. Andrews, as: "The anarchy of emptiness never tempts me, even when it is resorted to as temporary measure,"[1].So, in a sense, The Home and the World may be regarded as Tagore's assessments of the Movement in fictional form.

Tagore's World deals with the theme of Swadishi Movement in Bangal (1903-08). Depicting the Swadishi Movement in Bengal along with the portrayal of an impressionable, young housewife's traumatic passage into the world outside the home and back, the novel carries the spirit of nationalism. Set against the stormy days of revolutionary background of 1905 Bengal chocked with the war crises of "Swadeshi" and "Bandematram" the novel depicts the autobiographical sketches of three principal characters- Nikhil, his wife Bimala and Sandip, his friend. Bimala, who has lived sheltered life of a Hindu wife, suddenly hears the call of the outside world and thus she is turn between the pull of the "home" and the pull of "world". Here Tagore points out how " love could come in conflict more narrowly, more fireclay with politics also"[2] He narrates the poignant story of a woman undergoing a terrible mental tension and turmoil by taking part in the Swadeshi Movement and being torn asunder by the conflicting royalties to the house and the outside world. In this simple story of a love triangle, he makes Nikhil and Sandip represent the conflict between idealism and realism, or truth and illusion. In fact, this novel is strongly ideological because of the implication of the critical debate between Gandhism and terrorist politics.

In The Home and the world Tagore depicts the conflict between nationalism and universal manhood vividly and gives the most profound expression to his faith in the perfect independence and freedom for an individual irrerespective of any particular nationality. He makes Sandip represent the pugnacious nationalism and narrow-minded patriotism of the politically conscious Indians during the Swadeshi Movement. Sandip is typical Machiavellian

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5.	Dr. Shailendra Kumar Singh	

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TREATMENT OF ANTI-COLONIAL NATIONALISM AND RELIGION IN TAGORE'S GORA

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ABSTRACT

Nationalism can define and interpret through its growth in India as reflected in the novels by indo-Anglian writers. In fact , the Indo- Anglian Fiction has reflected various aspects of this nationalism. Tagore novel Gora, shows all those aspects of nationalism. Gora has the theme of nationalism needed in multi-rational multi-religious community like India. It exemplifies Tagore's vision of new cretistic Indai, rising above the consideration of caste, community and race. Tagore not only asserts the value of humanism in the life but also point out the danger faced by the national awaking in the country at the beginning of twentieth century. Tagore warns Indian against the drivelling of national movement towards a militant Hinduism under the stormy influence of extremist leaders.

From a study of struggle of the Indians for freedom from the colonial rule we can define nationalism as a weapon for a dominated community's fight against the foreign rule of an imperialist country. Nationalism may be also defined and interpret through its growth in India as reflected in the novel by Indo-Anglian writers. In fact, the Indo-Anglian Fiction has reflected various aspects of this nationalism. One aspect of nationalism as shown in the early Indi-Anglian novels is the spirit of self-identification or self assertion. Indian freedom movement can be divided into three phases. The first phase involves spontaneous unorganized armed rebellions against the newly established British rule. The second phase involves the demand for self-government for Indians while the English educated Indian still expressed their willingness to remain under the British Empire itself. The third phase expresses Indian people's demand for complete independence from the British rule.

Tagore's novel Gora, shows all these aspects of nationalism. Gora, the longest and the most widely acclaimed novel of R. Tagore, has the theme of nationalism needed in a multi-raial and multi-religious community like India. It exemplifies Tagore's vision of new, syncretistic India, rising above the considerations of caste, community and race. At the beginning the central character Gora seemed to be a bigoted and xenophobic Hindu nationalist. But he undergoes a process of realization of his ideals and achieves a liberal humanistic ethics at the end. So the novel has contemporary relevance. It is realty a strong political and patriotic novel voicing the aspirations of the resurgent India. The central theme of the novel has a political undercurrent. The novel reflects the patriotic zeal of Gora and also projects all the important political questions, the conflict of the ideals and aspiration between the East and the West. In the character of Gora "Tagore has tried to bring about the fusion of the East and the West"[1]. The novel covering a wide canvas marks Tagore's "search for national identity"[2]. It also represents his efforts "at projecting an image of India which is at once, historical and ahistorical."[3] It is, "perhaps the most complete picture of the life of Bengal towards the end of twentieth century"[4]. The main plot of the novels

6.	Dr. Shailendra Kumar Singh	

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Tagore's Binodini: One of the Finest Studies of Woman's Psychology

Dr. Shailendra Kumar Singh
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Abstract

Tagore was the first Indian writer of modern age to produce 'novels of ideas'. He is not so much interested in depicting the realm of action in the outside world as he is in exploring the realm of thought and feeling in the inner world of the human mind and heart. His novels can be called psychological novel. Another great characteristic of his novel is that it frankly deals with man's relations with woman in different aspects.

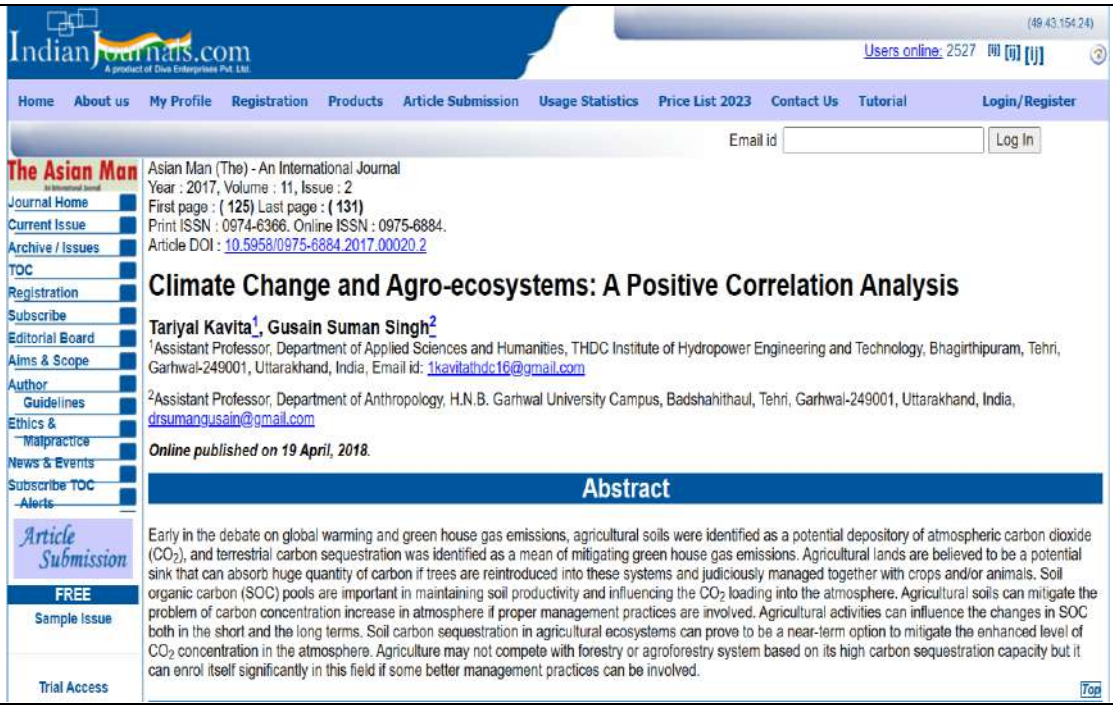
Rabindranath Tagore was the first Indian writer of modern age to produce 'novels of ideas'. He is not so much interested in depicting the realm of action in the outside world as he is in exploring the realm of thought and feeling in the inner world of the human mind and heart. His novels can be called psychological novel. Another great characteristic of his novel is that it frankly deals with man's relations with woman in different aspects.

Rabindranath Tagore's first major novel, *Binodini* has attracted much attention from critics like Bhamani Bhattacharya, Niharranjan Ray, Humayun Kabir, Masti Venkatesa Iyenger, Krishna Kripalani, R.C. Majumdar, Bimanbehari Majumdar, George Sympson etc. for a variety of reasons. It has been hailed as "the first modern novel by an Indian authore"[1] "the beginning of a new pathway"[2] "the first all-round psychological novel devoted to the study of social problems"[3] and "one of the first and finest studies of woman's psychology in Bengali or indeed any other language".[4]

The story of the novel is very simple and it revolves around the problem of human relationships. A critical analysis of the main character Binodini's crisis and the denouement as an archetypal image of the tragic plight of a young Hindu widow will show Tagore's humanism. His humanism consists of his love for mankind and his emphasis on "man's role for emancipation of himself through emancipation of the whole of mankind".[5] There are six characters in the novel of whom four are women characters. The development of the plot is related to Bindoini's frustrations and suffering in which is summed up the author's ironic acceptance of the orthodox Hindu society of the day.

The narrative starts with sidelight on the social conditions pertaining to marriage and family relationship. Binodini is the only child of her parents. Though she is beautiful accomplished and tutored by an English governess, her marriage has become a problem for her mother as her father died without leaving enough money for her dowry. Her hand is offered to Mahendra, the son of the wealthy Rajlakshmi, an old friend of her mother, who offers initial acceptance, backs out due to his aversion for an arranged marriage and the fear of the new bride's ousting his mother. Rajlakshmi could help her friend only by getting Binodini married to a distant cousin of hers whose only claim to distinction was his excessively enlarged liver. So she is soon widowed and condemned in full-blooded youth to a life of privation, denial and misery in a remote village. Three years later, on an impulse and against the wishes of his mother, the wayword Mahendra marries the unschooled, plain looking Asha, the niece of his aunt Anpurna. The bride is brought up by her uncle.

Very soon an estrangement develops between the possessive mother and the wife-infatuated son. Rajlkshmi unable to bear the sight of her son's uxoriousness goes away to her native village, accompanied by Bihari, Mahendra's close friend. There she is looked after with

7.	Dr. Suman Singh Gusain	

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Climate Change and Agro-ecosystems: A Positive Correlation Analysis

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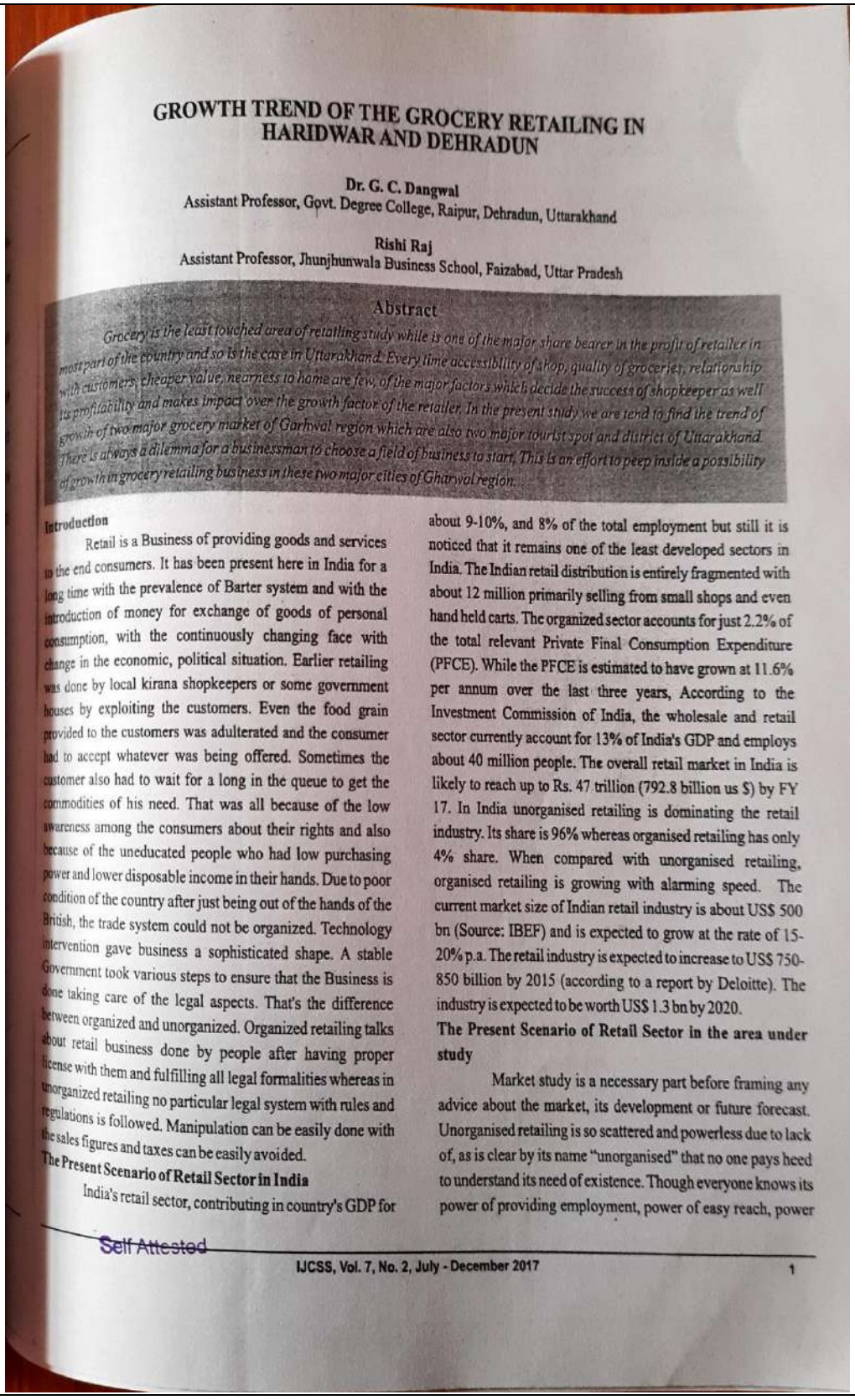
Online published on 19 April, 2018.

Abstract

Early in the debate on global warming and green house gas emissions, agricultural soils were identified as a potential depository of atmospheric carbon dioxide (CO_2), and terrestrial carbon sequestration was identified as a mean of mitigating green house gas emissions. Agricultural lands are believed to be a potential sink that can absorb huge quantity of carbon if trees are reintroduced into these systems and judiciously managed together with crops and/or animals. Soil organic carbon (SOC) pools are important in maintaining soil productivity and influencing the CO_2 loading into the atmosphere. Agricultural soils can mitigate the problem of carbon concentration increase in atmosphere if proper management practices are involved. Agricultural activities can influence the changes in SOC both in the short and the long terms. Soil carbon sequestration in agricultural ecosystems can prove to be a near-term option to mitigate the enhanced level of CO_2 concentration in the atmosphere. Agriculture may not compete with forestry or agroforestry system based on its high carbon sequestration capacity but it can enrol itself significantly in this field if some better management practices can be involved.

Top

8.	Prof (Dr) G.C Dangwal	

GROWTH TREND OF THE GROCERY RETAILING IN HARIDWAR AND DEHRADUN

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Abstract

Grocery is the least touched area of retailing study while is one of the major share bearer in the profit of retailer in most part of the country and so is the case in Uttarakhand. Every time accessibility of shop, quality of groceries, relationship with customers, cheaper value, nearness to home are few, of the major factors which decide the success of shopkeeper as well its profitability and makes impact over the growth factor of the retailer. In the present study we are tend to find the trend of growth of two major grocery market of Garhwal region which are also two major tourist spot and district of Uttarakhand. There is always a dilemma for a businessman to choose a field of business to start. This is an effort to peep inside a possibility of growth in grocery retailing business in these two major cities of Gharwol region.

Introduction

Retail is a Business of providing goods and services to the end consumers. It has been present here in India for a long time with the prevalence of Barter system and with the introduction of money for exchange of goods of personal consumption, with the continuously changing face with change in the economic, political situation. Earlier retailing was done by local kirana shopkeepers or some government houses by exploiting the customers. Even the food grain provided to the customers was adulterated and the consumer had to accept whatever was being offered. Sometimes the customer also had to wait for a long in the queue to get the commodities of his need. That was all because of the low awareness among the consumers about their rights and also because of the uneducated people who had low purchasing power and lower disposable income in their hands. Due to poor condition of the country after just being out of the hands of the British, the trade system could not be organized. Technology intervention gave business a sophisticated shape. A stable Government took various steps to ensure that the Business is done taking care of the legal aspects. That's the difference between organized and unorganized. Organized retailing talks about retail business done by people after having proper license with them and fulfilling all legal formalities whereas in unorganized retailing no particular legal system with rules and regulations is followed. Manipulation can be easily done with the sales figures and taxes can be easily avoided.

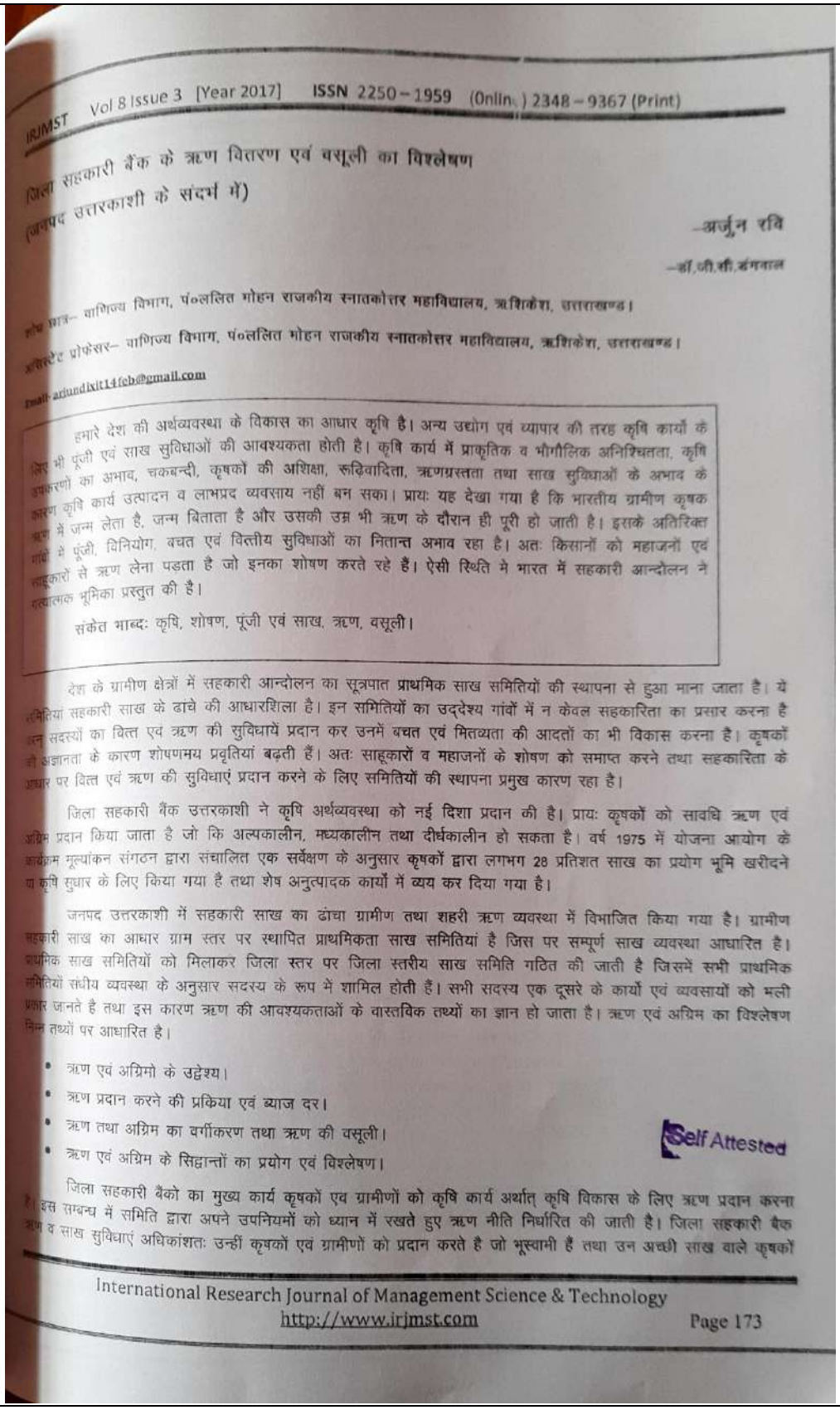
The Present Scenario of Retail Sector in India

India's retail sector, contributing in country's GDP for about 9-10%, and 8% of the total employment but still it is noticed that it remains one of the least developed sectors in India. The Indian retail distribution is entirely fragmented with about 12 million primarily selling from small shops and even hand held carts. The organized sector accounts for just 2.2% of the total relevant Private Final Consumption Expenditure (PFCE). While the PFCE is estimated to have grown at 11.6% per annum over the last three years, According to the Investment Commission of India, the wholesale and retail sector currently account for 13% of India's GDP and employs about 40 million people. The overall retail market in India is likely to reach up to Rs. 47 trillion (792.8 billion us $) by FY 17. In India unorganised retailing is dominating the retail industry. Its share is 96% whereas organised retailing has only 4% share. When compared with unorganised retailing, organised retailing is growing with alarming speed. The current market size of Indian retail industry is about US$ 500 bn (Source: IBEF) and is expected to grow at the rate of 15-20% p.a. The retail industry is expected to increase to US$ 750-850 billion by 2015 (according to a report by Deloitte). The industry is expected to be worth US$ 1.3 bn by 2020.

The Present Scenario of Retail Sector in the area under study

Market study is a necessary part before framing any advice about the market, its development or future forecast. Unorganised retailing is so scattered and powerless due to lack of, as is clear by its name "unorganised" that no one pays heed to understand its need of existence. Though everyone knows its power of providing employment, power of easy reach, power

Self Attested

9.	Prof (Dr) G.C Dangwal	

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असिस्टेंट प्रोफेसर– वाणिज्य विभाग, पं॰ललित मोहन राजकीय स्नातकोत्तर महाविद्यालय, ऋषिकेश, उत्तराखण्ड।

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हमारे देश की अर्थव्यवस्था के विकास का आधार कृषि है। अन्य उद्योग एवं व्यापार की तरह कृषि कार्यों के लिए भी पूंजी एवं साख सुविधाओं की आवश्यकता होती है। कृषि कार्य में प्राकृतिक व भौगौलिक अनिश्चितता, कृषि उपकरणों का अभाव, चकबन्दी, कृषकों की अशिक्षा, रूढ़िवादिता, ऋणग्रस्तता तथा साख सुविधाओं के अभाव के कारण कृषि कार्य उत्पादन व लाभप्रद व्यवसाय नहीं बन सका। प्रायः यह देखा गया है कि भारतीय ग्रामीण कृषक ऋण में जन्म लेता है, जन्म बिताता है और उसकी उम्र भी ऋण के दौरान ही पूरी हो जाती है। इसके अतिरिक्त गांवों में पूंजी, विनियोग, बचत एवं वित्तीय सुविधाओं का नितान्त अभाव रहा है। अतः किसानों को महाजनों एवं साहूकारों से ऋण लेना पड़ता है जो इनका शोषण करते रहे हैं। ऐसी स्थिति मे भारत में सहकारी आन्दोलन ने सत्वात्मक भूमिका प्रस्तुत की है।

संकेत शब्दः कृषि, शोषण, पूंजी एवं साख, ऋण, वसूली।

देश के ग्रामीण क्षेत्रों में सहकारी आन्दोलन का सूत्रपात प्राथमिक साख समितियों की स्थापना से हुआ माना जाता है। ये समितियां सहकारी साख के ढांचे की आधारशिला है। इन समितियों का उद्देश्य गांवों में न केवल सहकारिता का प्रसार करना है बल्कि सदस्यों का वित्त एवं ऋण की सुविधायें प्रदान कर उनमें बचत एवं मितव्यता की आदतों का भी विकास करना है। कृषकों की अज्ञानता के कारण शोषणमय प्रवृतियां बढ़ती हैं। अतः साहूकारों व महाजनों के शोषण को समाप्त करने तथा सहकारिता के आधार पर वित्त एवं ऋण की सुविधाएं प्रदान करने के लिए समितियों की स्थापना प्रमुख कारण रहा है।

जिला सहकारी बैंक उत्तरकाशी ने कृषि अर्थव्यवस्था को नई दिशा प्रदान की है। प्रायः कृषकों को सावधि ऋण एवं अग्रिम प्रदान किया जाता है जो कि अल्पकालीन, मध्यकालीन तथा दीर्घकालीन हो सकता है। वर्ष 1975 में योजना आयोग के कार्यक्रम मूल्यांकन संगठन द्वारा संचालित एक सर्वेक्षण के अनुसार कृषकों द्वारा लगभग 28 प्रतिशत साख का प्रयोग भूमि खरीदने या कृषि सुधार के लिए किया गया है तथा शेष अनुत्पादक कार्यों में व्यय कर दिया गया है।

जनपद उत्तरकाशी में सहकारी साख का ढांचा ग्रामीण तथा शहरी ऋण व्यवस्था में विभाजित किया गया है। ग्रामीण सहकारी साख का आधार ग्राम स्तर पर स्थापित प्राथमिकता साख समितियां है जिस पर सम्पूर्ण साख व्यवस्था आधारित है। प्राथमिक साख समितियों को मिलाकर जिला स्तर पर जिला स्तरीय साख समिति गठित की जाती है जिसमें सभी प्राथमिक समितियों संघीय व्यवस्था के अनुसार सदस्य के रूप में शामिल होती हैं। सभी सदस्य एक दूसरे के कार्यों एवं व्यवसायों को भली प्रकार जानते है तथा इस कारण ऋण की आवश्यकताओं के वास्तविक तथ्यों का ज्ञान हो जाता है। ऋण एवं अग्रिम का विश्लेषण निम्न तथ्यों पर आधारित है।

- ऋण एवं अग्रिमो के उद्देश्य।
- ऋण प्रदान करने की प्रकिया एवं ब्याज दर।
- ऋण तथा अग्रिम का वर्गीकरण तथा ऋण की वसूली।
- ऋण एवं अग्रिम के सिद्वान्तों का प्रयोग एवं विश्लेषण।

Self Attested

जिला सहकारी बैंको का मुख्य कार्य कृषकों एव ग्रामीणों को कृषि कार्य अर्थात् कृषि विकास के लिए ऋण प्रदान करना है। इस सम्बन्ध में समिति द्वारा अपने उपनियमों को ध्यान में रखते हुए ऋण नीति निर्धारित की जाती है। जिला सहकारी बैंक ऋण व साख सुविधाएं अधिकांशतः उन्हीं कृषकों एवं ग्रामीणों को प्रदान करते है जो भूस्वामी हैं तथा उन अच्छी साख वाले कृषकों

10.	Prof (Dr) Savita Verma	

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H- Conharmonic * (Star) Curvature tensor $\tilde{L}$ With Cosymplectic Manifold

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ABSTRACT

Tokagi, H and Watanabe [1] Yano, Y. [2], Mishra, R.S. [3], Pandey [4], Tachibana, S. [5] etc., have studied H-Conharmonic* (Star) Curvature tensor $\tilde{L}$, The studies of Cosymplectic manifold with orthogonal basis equipped with different structure have been made by Yano [2], Tokagi [1] and Mishra[3]. Here we have discussed Cosymplectic manifold M_n (n=2m+1) possessing the orthonormal basis $\{e_i, Fe_i\}$, i =1, 2, 3----------2m of unit vector which are normal to the contact vector T, we have obtained the expression relating the sectional curvature and scalar curvature in H-Conharmonic* (Star) Curvature tensor$\tilde{L}$

WORDS: H-Conharmonic* (Star) Curvature tensor$\tilde{L}$, Cosymplectic manifold, orthonormal basis, almost contact metric (almost Grayan) manifold, Sectional curvature etc.

INTRODUCTION

Let M_n , n = 2m+1 be an almost contact metric (almost Grayan) manifold equipped with an almost contact metric structure {F, T, A, g} satisfying:

(1.1) (a) $F^2 X = -X + A(X)T$

(1.1) (b) $A(FT) = 0$

(1.1)(c) $FT = 0$

(1.1)(d) $A(T) = 0$

(1.2)(a) $g(\bar{X},\bar{Y}) = g(X,Y) - A(X)A(Y)$

(1.2)(b) $g(T, X) = A(X)$

(1.2)(c) $'F(X, Y) \cong g(\bar{X}, Y) = -g(X,\bar{Y}) = -'F(Y, X)$

Where

(1.2)(d) $\bar{X} \cong FX$,

For all C^∞ vector fields X, Y in M_n, here F is a structure tensor of type (1, 1), A is a 1- form, T is a contravariant vector field associated with A, g is a fundamental metric tensor and 'F is a fundamental 2- form. Let D be a Levi - cevita or Riemannian curvature tensor in M_n . If in M_n , the structure tensor F and the contact form A are covariantly constant i.e.

(1.3) $(D_X F)(Y) = 0$

(1.4)(a) $(D_X A)(Y) = 0$

(1.4)(b) $D_X T = 0$

Then M_n is called a Cosymplectic Manifold [2] and [3].

H-Conharmonic* (Star) curvature tensor $\tilde{L}$is given by[5]

(1.5) $'\tilde{L}(X,Y,Z,W) \cong g(\tilde{L}(X,Y,Z),W)$

$= 'K(X,Y,Z,W) - \frac{1}{n+4}\{Ric(X,W)g(Y,Z) - Ric(Y,W)g(X,Z) + Ric(\bar{X},W)'F(Y,Z)$

$- Ric(\bar{Y},W)'F(\bar{X},Z) - 2Ric(Z,W)'F(X,Y)\}$

11.	Prof (Dr) Savita Verma	

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Another Quarter- Symmetric Metric- F-T-Connection On Trans - Sasakian Manifold

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BACKGROUND

Oubina, J.A.[1] defined and initiated the study of Trans-Sasakian manifolds. Blair [2] ,Prasad and Ojha [3]. Hasan Shahid [4] and some other authors have studied different properties of C-R-Sub –manifolds of Trans-Sasakian manifolds. Golab, S. [5] studied the properties of semi-symmetric and Quarter symmetric connections in Riemannian manifold. Yano,K.[6] has defined contact conformal connection and studied some of its properties in a sasakian manifold. Mishra and Pandey [7] have studied the properties in Quarter symmetric metric F-connections in an almost Grayan manifold.

Key words: Riemannian curvature tensor, Trans-Sasakian manifold, C-R-Sub –manifolds of Trans-Sasakian manifolds, semi-symmetric and Quarter symmetric connections in Riemannian manifold, almost Grayan manifold.

1. INTRODUCTION

Let M_n (n = 2m + 1) be an almost contact metric manifold endowed with a (1,1)-type structure tensor F, a contravariant vector field T, a -1 form A associated with T and a metric tensor 'g' satisfying :---

(1.1)(a) $F^2X = -X + A(X)T$

(1.1)(b) $FT = 0$

(1.1)(c) $A(FX) = 0$

(1.1)(d) $A(T) = 1$

and

(1.2)(a) $g(\bar{X},\bar{Y}) = g(X, Y) - A(X)A(Y)$

Where

(1.2)(b) $\bar{X} = FX$

And

(1.2)(c) $g(T, X) = A(X)$

SELF ATTESTED

For all C^∞- vector fields X, Y in M_n also , a fundamental 2-form 'F in M_n is defined as

(1.3) $'F(X,Y) = g(\bar{X},Y) = -g(X,\bar{Y}) = -'F(Y,X)$

Then, we call the structure bundle {F,T,A,g}an almost contact-metric structure [1]

An almost contact metric structure is called normal [1], if

(1.4)(a) $(dA)(X,Y)T + N(X,Y) = 0$

12.	Prof (Dr) Savita Verma	

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Quarter- Symmetric Metric- F-T-Connection on Trans - Sasakian Manifold

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ABSTRACT

Oubina, J.A.[1] defined and initiated the study of Trans-Sasakian manifolds. Blair [2] ,Prasad and Ojha [3], Hasan Shahid [4] and some other authors have studied different properties of C-R-Sub –manifolds of Trans-Sasakian manifolds. Golab, S. [5] studied the properties of semi-symmetric and Quarter symmetric connections in Riemannian manifold. Yano,K.[6] has defined contact conformal connection and studied some of its properties in a Sasakian manifold. Mishra and Pandey [7] have studied the properties in Quarter symmetric metric F-connections in an almost Grayan manifold.

Result : In this paper we have studied Riemannian curvature tensor on Trans-Sasakian manifold. Following the patterns of Yano [6], we have proved that a Trans –Sasakian manifold admitting a killing structure vector is an (α, 0) type Trans –Sasakian manifold. Further we have proved that a Trans –Sasakian manifold with structure 1-form A is closed,becomes (β,0) type Trans –Sasakian manifold.

Conclusion: Trans –Sasakian manifold admitting a killing structure vector is an (α, 0) type Trans –Sasakian manifold. And a Trans –Sasakian manifold with structure 1-form A is closed ,becomes (β,0) type Trans –Sasakian manifold.

Key words: Riemannian curvature tensor, Trans-Sasakian manifold, C-R-Sub –manifolds of Trans-Sasakian manifolds, semi-symmetric and Quarter symmetric connections in Riemannian manifold, almost Grayan manifold.

1. INTRODUCTION

Let M_n ($n = 2m + 1$) be an almost contact metric manifold endowed with a (1,1)-type structure tensor F, a contravariant vector field T, a -1 form A associated with T and a metric tensor 'g' satisfying :---

(1.1)(a) $F^2X = -X + A(X)T$

(1.1)(b) $FT = 0$

(1.1)(c) $A(FX) = 0$

(1.1)(d) $A(T) = 1$

and

(1.2)(a) $g(\bar{X},\bar{Y}) = g(X, Y) - A(X)A(Y)$

Where

(1.2)(b) $\bar{X} \cong FX$

And

(1.2)(c) $g(T, X) \cong A(X)$

For all C^∞- vector fields X, Y in M_n also , a fundamental 2-form 'F in M_n is defined as

(1.3) $'F(X,Y) = g(\bar{X},Y) = -g(X,\bar{Y}) = -'F(Y,X)$

Then, we call the structure bundle {F,T,A,g}an almost contact-metric structure [1]

An almost contact metric structure is called normal [1], if

(1.4)(a) $(dA)(X,Y)T + N(X,Y) = 0$

Where

(1.4)(b) $(dA)(X,Y) = (D_XA)(Y) - (D_YA)(X)$, D is the Riemannian connection in M_n .

And

(1.5) $N(X, Y) = (D_{\bar{X}}F)(Y) - (D_{\bar{Y}}F)(X) - \overline{(D_{\bar{X}}F)(Y)} + \overline{(D_YF)(X)}$

is Nijenhenus tensor in M_n .

An almost contact metric manifold M_n with structure bundle {F,T,A,g} is called a Trans-Sasakian manifold [3]&[1],if

(1.6) $(D_XF)(Y) = \alpha\{g(X,Y)T - A(Y)X\} + \beta\{'F(X,Y)T - A(Y)\bar{X}\}$

Where α , β are non -zero constants.

It can be easily seen that a Trans-Sasakian manifold is normal. In view of (1.6) one can easily obtain in M_n , the relations

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13.	Prof (Dr) Anita Tomar	

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STRICT COINCIDENCE AND STRICT COMMON FIXED POINT VIA STRONGLY TANGENTIAL PROPERTY WITH AN APPLICATION

ANITA TOMAR, SAID BELOUL, SHIVANGI UPADHYAY AND RITU SHARMA

ABSTRACT. In this paper, we prove two strict coincidence and strict common fixed point theorems for weakly compatible hybrid pairs of strongly tangential mappings satisfying F-contraction, in a metric space. An example and an application to functional equations arising in dynamic programming is given to illustrate our results. In the sequel several known results are extended, generalized and improved.

1. INTRODUCTION

The contraction principle due to Banach has been generalized in different directions and one of such generalizations is due to Nadler [13], where he used the Hausdorff metric to prove existence of a fixed point of multivalued mapping in metric space. Later many authors established some results in non linear analysis concerning the multivalued / hybrid fixed point theory and its applications using two types of distances. One is the Hausdorff distance and another is the $\delta-$ distance. Although $\delta-$ distance is not a metric like the Hausdorff distance, but shares most of the properties of a metric. In this paper we utilize a Ćirić type F-contraction and Hardy-Rogers type F-contraction inequality introduced by Minak et al. [12] (independently by Wardowski and Dung [23] as F-weak contraction) and Cosentino and Vetro [7] respectively, using $\delta-$ distance to establish the existence of a strict coincidence and strict common fixed point of a weakly compatible hybrid pair of mappings which are strongly tangential. However it is worth mentioning here that idea of F-contraction was initiated by Wardowski [22] which has again been generalized by several authors in different directions. In the last section, an application to functional equation arising in dynamic programming is given to demonstrate applicability of results obtained. We also present some remarks to show that our results provide extensions as well as substantial generalizations and improvements of several well known results existing in literature.

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14.	Prof (Dr) Anita Tomar	

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ON EXISTENCE OF STRICT COINCIDENCE AND COMMON STRICT FIXED POINT OF A FAINTLY COMPATIBLE HYBRID PAIR OF MAPS

ANITA TOMAR, SHIVANGI UPADHYAY AND RITU SHARMA

ABSTRACT. In this paper, we introduce conditional compatibility, faint compatibility and conditional reciprocal continuity to a hybrid pair of maps involving a single-valued and a multivalued map using δ-distance and establish strict coincidence and common strict fixed point of a faintly compatible hybrid pair without containment requirement of range space of involved maps or completeness of underlying space/subspaces. In the sequel we generalize, extend and improve several results existing in literature, for instance: Bisht and Shahzad [Faintly compatible mappings and common fixed points, Fixed point theory and applications, 2013, 2013:156], Pant and Bisht [Common fixed point theorems under a new continuity condition, Ann. Univ. Ferrara 58(1)(2012), 127-141] and Pant and Bisht [Occasionally weakly compatible mappings and fixed points, Bull. Belg. Math. Soc. Simon Stevin, 19 (2012), 655-661] and references therein. Results obtained are supported by illustrative examples.

1. INTRODUCTION

Hybrid fixed point theory, which is the realm of common fixed point theorems for single-valued and multivalued maps has prospective applications in functional inclusions, optimization theory, fractal graphics, oscillator equations, neutral delay differential equations and discrete dynamics for set-valued operators. Recently, Bisht and Shahzad [1] introduced the notion of faint compatibility, as an improvement of conditional compatibility introduced by Pant and Bisht [6], which permitted the existence of a common fixed point or multiple fixed point or coincidence points under both contractive and non-contractive conditions for single valued maps. Further Pant and Bisht [5] introduced the notion of conditional reciprocal continuity, which is weaker than most of the variants of continuity. For a brief development of variants of continuity and the relation between them one may refer to Tomar and Karapinar [9]. In this paper we introduce/extend the notions of conditional compatibility, faint compatibility and conditional reciprocal continuity to a hybrid pair of maps in a metric space and utilize these relatively weaker notions to establish

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15.	Dr. Sarita Tiwari	

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INTERNATIONAL LEGAL STREAK FOR BIODIVERSITY CONSERVATION

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Abstract

We have seen that Environmental and Ecological constraints have symbolized our thinking towards new goals, or goals which have been neglected under the influence of a culture of mass production and consumption. The concept of respecting and protecting the human environment has its objective the fulfillment of the legislature, immediate ambitions of individuals and nations as well as the interests of future generation. The rectification of past errors, wherever possible, has its objects the provisions of better opportunities for development and progress.After Second World War, a new phase started in which nations started addressing the environmental issues and started forming international organizations. It was also during this period that there was a growing awareness about the relationship between economic development and environmental degradation and its preservation. During this period, the main reasons for the development of international environmental law were the advancement in science and technology and the unprecedented unscientific exploitation of the natural resources.

INTRODUCTION: The state of the conservation of biodiversity at the outset of the twenty first century is not the same as it was decades ago. The proliferation of private enterprise and neoliberal practices, combined with rapid integration of global processes, have reduced the potential impact of international accords and protocols on the environment and sustainable development to meager symbols of complacency and indifference. Major environmental issues have become muddled in international bargaining processes, with hardly any direct focus or financial resources devoted to their alleviation. Today the goals commonly expressed by environmentalists include reduction and clean up man made pollution, with future goals of zero pollution, reducing societal consumption of non-renewable fuels, development of alternative green, low-carbon or renewable energy sources, conservation and sustainable use of scarce resources such as water, land and air, protection of representative or unique or pristine ecosystems, preservation and expansion of threatened or endangered species or ecosystems from extinction, the establishment of natural and biosphere reserves

16.	Dr. Dimple Bhatt	

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Socio- economic issues in empowerment of hilly women through information, education and communication (IEC) interventions: A review of past studies

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ABSTRACT

This paper reviews the literature on how empowerment can lead to an improvement in the health and overall well-being status of an individual, group, or a community of womenfolk. There is a broad body of literature on empowerment, and this review has been designed to identify material, particularly case studies, that can be included within the following 'empowerment domains': Participation, Community-based organizations, Local leadership, Resource mobilization, Assessment of problems, Links with other people and organizations, Role of outside agents, and Programme management. The paper discusses the results of the literature review and provides examples, from both developed and developing countries, of how each of the 'empowerment domains' has led to an improvement in health and economic outcomes. The results of the review should be of interest to the planners and practitioners of health, population and nutrition programmes that have a particular focus on empowerment.

Key Words : Women, Empowerment, Health, Social well-being outcomes, Review literature

INTRODUCTION

Women's status in society :

Women form about half of the population of the country, but their situation has been grim. For centuries, they have been deliberately denied opportunities of growth in the name

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17.	Dr. Leena Rawat	

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Socio- economic issues in empowerment of hilly women through information, education and communication (IEC) interventions: A review of past studies

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ABSTRACT

This paper reviews the literature on how empowerment can lead to an improvement in the health and overall well-being status of an individual, group, or a community of womenfolk. There is a broad body of literature on empowerment, and this review has been designed to identify material, particularly case studies, that can be included within the following 'empowerment domains': Participation, Community-based organizations, Local leadership, Resource mobilization, Assessment of problems, Links with other people and organizations, Role of outside agents, and Programme management. The paper discusses the results of the literature review and provides examples, from both developed and developing countries, of how each of the 'empowerment domains' has led to an improvement in health and economic outcomes. The results of the review should be of interest to the planners and practitioners of health, population and nutrition programmes that have a particular focus on empowerment.

Key Words : Women, Empowerment, Health, Social well-being outcomes, Review literature

INTRODUCTION

Women's status in society :

Women form about half of the population of the country, but their situation has been grim. For centuries, they have been deliberately denied opportunities of growth in the name

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18.	Prof (Dr) Jyoti Khare	

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CSR PRACTICES UNDER SUSTAINABILITY VISION: AN OVERVIEW

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When we talk about prosperity of any country, the one and only word that clicks our mind is development. This word categorized the country into being developed country or developing country. This development is mainly known with economic growth of the country.The essence of this form of development is a stable relationship between human activities and the natural world, which does not diminish the prospects for future generation to enjoy the quality of lifeat least as good as our own by far, most common CSR activities are focused to do in a sustainable manner.Government has made many policies and rules to make them responsible towards the society as well as the nation. In this reference, Corporate Social Responsibility(CSR) refers to our responsibilitytowards sustainable development. Responsibility is not concern only with people but also with nature. CSR policy outlines our efforts to give back to the world as it gives to us. Enactment of companies Act 2013 by the Ministry of Corporate affairs, Government of India was one of the world's largest experiments of introducing the CSR as a mandatory provision by imposing statutory obligation on companies to take up CSR projects towards social welfare activities. This has made India the only country which has regulated and mandated CSR for some select categories of companies registered under the Act. This CSR initiative will push the nation towards achievement of sustainable development goal and public- private partnership in transforming data.

LITERATURE REVIEW:

Nikos Avlonas(2018) stated in his article thatOver the past decade, the term *sustainability* has caught on in the boardroom, courtroom and living room. While the concept has reached the mainstream, opportunities abound for implementation.Corporations will increase value integrating sustainability across departments, product lines, R&D, manufacturing, infrastructure, everything! Up and down the supply chain, as imperative for international trade or a method of risk abatement – assimilating sustainability will become essential to ameliorate corporate woes and increase profitability.

Libby Bernick(2017) pointed out Business is showing increasing interest in using the Sustainable Development Goals (SDGs) to inform and enhance their social and environmental programs and ultimately their business strategies. The SDGs were adopted by the United Nations in 2015 and include 17 ambitious goals and 169 targets aimed at ending poverty, protecting the planet and ensuring prosperity for all.
The appeal of the SDGs for companies and financial institutions is that they harmonize the social, environmental and economic aspects of sustainable development—and perhaps most importantly—provide a clear vision of what the international community wants to achieve. It gives meaning and purpose, not just to corporate sustainability programs, but to an organization's business objectives.
Sustainability is often confused with corporate social responsibility (CSR), though the two are not the same. Bansal and DesJardine (2014) focused on the difference between CSR and sustainability. He stated that the notion of 'time' discriminates sustainability from CSR and other similar concepts. Whereas ethics, morality, and norms permeate CSR, sustainability only obliges businesses to make intertemporal trade-offs to safeguard intergenerational equity. Short-termism is the bane of sustainability.[9]
Hanson, E and Schaltegger, S (2014) has enunciated that the Sustainability Balanced Scorecard is a performance measurement and management system aiming at balancing financial and non-financial as well as short and long-term measures. It explicitly integrates strategically relevant environmental, social and ethical goals into the overall performance management system.
Susan Mcpherson(2017) mentioned the Tim Mohin, chief executive at GRI's belief in her article that sustainability will remain a priority for corporations.

OBJECTIVES OF STUDY:The aims of the study are:-

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Demonetization: A Step against Black Money (With Special Reference to Counterfeit Money)

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Abstract

The government, from time to time, formulates fiscal policies that are meant to spur economic growth. A lot of black money circulates in the economy, because the sources of income are not known to the government and that are also unaccounted. For removing the black money, a multifaceted policy is needed. Demonetisation is a step that combats this problem up to great extent. By demonetization counterfeit notes could be assessed. To mop up this money out of circulation, the government can demonetize so that the money holders are forced to deposit the cash with the banks or lose their wealth. Through this paper, it has tried to understand that how demonetization strategy works in detecting the black money as counterfeiting money, forgery and money laundering activities. PTI stated on 30 August, 2017 "with over Rs. 15 lakh crore of junked currency coming back into the banking system post demonetization." And for Indian economy that is primarily cash transaction based economy, removing 86% of the money in circulation is indeed a brave step taken by government.

Key words: *Demonetization, Black Money, Counterfeit currency.*

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20.	Prof (Dr) Jyoti Khare	

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135B

Role of AI in the Banking Sector

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Abstract:

Artificial intelligence is an innovative technology that must be used in technological revolution worldwide. AI can be used at every stage of life. Artificial intelligence has much powerful software for growing in every industry. It can be used in banking sector also which is helpful to reduce certain task and time. But many people in banking industry don't know how to use this software so by giving a training of software bank will increase their performance. India is a country of 130 crore people which is second largest population in all over the world. Country's economy mainly depends on financial sector to the growth of each sector in the nation. In India after every decision of government banking sector must be involved for the further work distribution. We have seen at the time of Indian banknote demonetization Bank has done work at the front side. So using AI at this time to reduce serious risk, detect duplicate note and help to manage regulatory compliance. This article will help you how Indian banks using AI and how they are getting benefits from it.

Keyword:

Artificial Intelligence, Big Data, Banking industry, chatbot, financial industry, technology

Introduction:

Artificial Intelligence is demonstrated by Machine whereas natural intelligence is demonstrated by human or animal. AI is completely different from natural intelligence. Humans are associated with human mind with some of the function like "to learn something" or "problem solving technique". All of these terms are completely ignored by Artificial Researchers instead of that they developed a recommendation system like to understand human speech (such as siri or alexa), self-driving cars (e.g. Tesla), and competing at the highest level in strategic game systems (such as chess). If machines are increasingly capable of completing the task then this can be consider as a routine technology or Artificial intelligence which can be used in every day of human life. The primary goal of AI includes reasoning, knowledge representation, planning, learning,

21.	Prof (Dr) Arun Kumar Agarwal	

EVALUATION OF LICHEN DIVERSITY AT UTTARKASHI DISTRICT

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ABSTRACT:

A collection of 35 lichen species belonging to 24 genera and 19 families from district Uttarkashi was carried out during 2015-16. The collection was identified and presented.

INTRODUCTION

Lichens are interesting living entities as they have been described as "dual organisms" because they show symbiotic association between fungus (termed the mycobiont) and a green alga or a cyanobacterium (termed the nhycobiont). Lichens have great economic value since time immemorial and are utilized for various purposes: Being rich in proteins, carbohydrates, fatty acids and phospholipids, lichens are considered to have good nutritive value and are used as food and fodder. *Parmelia cirrhata* Fr. is eaten as vegetable after boiling and frying in Sikkim (Saklani and Upreti, 1992). In South India, *Parmotrema abessinicum* (Kremp.)Hale is used to make curry powder. *Evemia furfuracea* (L.) Mann, (tree-moss), *E. mesomorpha* Nyl. and *E. prunastri* (L.) Ach. are used in perfumes, soaps, flavours and cosmetics (Nash and Egan, 1988). Some lichen species with cyanobacterial phycobionts (*Collema auriculatum* Hoff., *Peltigera cannina* Willd.) are capable of nitrogen fixation, hence useful in Nitrogen-cycle. Lichens are used as pollution indicators because of capability of accumulating heavy metals such as Pb, Zn, Cd, Ni, Cu, Hg and Cr, and toxic elemental pollutants such as SO2, NO and NO2 (Richarson and Nieboer, 1981; Upreti and Pandey, 1994, 2000; Bajpai et al., 2004).

Present study is based on collections of Lichen flora made during 2015 – 16 from various locations of Uttarkashi district particularly from Chirwasa, Bhojwasa, Barkot and Purola.

MATERIAL AND METHOD:

Site Description

The collection area is located between 1500m to 3500 m (asl) in the Uttarkashi district of Uttarakhand along with Bhagirathi and Yamuna valley. The local human population settled in the low land fringe areas comprises semi pastoralists with livestock grazing and agriculture as their dominant land use activities. While low elevation woodlands such as *Quercus- Rhododendron* forests are open for fodder and fuel wood collection throughout the year, nomadic grazing in the higher elevation forests and grasslands

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Crisis of Identity in Tagore's Gora

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Abstract

According to Tagore, the materialism of the nineteenth century is responsible for the disintegration of human personality. The dignity of the Individual is totally ignored and countless individuals are sacrificed to the blood-thirsty idols of organization. These problems are not merely suggested; they are fully discussed.

According to Tagore, the materialism of the nineteenth century is responsible for the disintegration of human personality. The dignity of the Individual is totally ignored and countless individuals are sacrificed to the blood-thirsty idols of organization.

These problems are not merely suggested; they are fully discussed. From the point of view of plot, characterization, dialogue and intellectual content, Gora is a great achievement of Tagore's art as a novelist. It centers round the love-episodes of four major characters Gora-Suchitra and Binoy-Lolita. Lolita and Sucharita are both lovable characters. But their temperaments differ from each other. Lalita is lovely, impulsive and restless. She is so rash and impulsive that she goes out all alone on the streamer in company with a young man without informing any one. Sucharita is calm and quiet. She feels deeply but does not demonstrate her feelings. She is a girl of strong will and controls her feelings by the dint of her will. We find grace in her speech and restraint in her movements.

Binoy is a highly educated Hindu youth with refined manners and liberal views. He has great love and regard for Gora whose views are extremely rigid and orthodox. Although Gora and Binoy is fast friend, Binoy is dominated by the masterful personality of the Gora. The individuality of Binoy cannot find full scope for development under this friendly domination. This is a kind of weakness in the character of Binoy and Lolita marks this weakness is the initial stage of her acquaintance with him. She has a liking for Binoy even at first sight and so she does not like this weakness in a person whom she likes.

Tagore is an adept in depicting the slow development of love in the human heart. The different stages in the development of Lolita's love for Binoy are very carefully described with minute accuracy. At the beginning she is angry that Binoy should allow himself to be dominated by his friend and echoes his opinions as his own. She says to Suchartia :

> His friend has overshadowed him so completely that Binoy Babu has no chance to showing himself. It is as though a cock-roach had swallowed a midge for allowing itself to be caught, and it does not heighten my respect for the cock-roach.[1]

Lolita is an individualist, a lover of freedom and upholder of truth. She not only asserts her individuality at any cost but also expects others to do so. She tells Sucherita that God has not given them intelligence to "expound other people's ideas, and a mouth simply to repeat other people's phrases ……"[2]. Hence, she cannot tolerate anyone who allows others to dominate. She ridicules Binoy for being a shadow of Gora and echoing his opinions. She admires her father who allows differences of opinion and never imposes his ideas on others. She finds the same thing is Suhartia too.

Protest is her medium of expression. She never takes defeat in her stride and does not believe in doing things by halves. Life, to her, is a practical reality constraints like womanhood, traditionalism and religion cannot bind her spirit of individualism and free thinking. As Bimanbehari Majumdar states, she is a "true follower of Raya Ramamohan Roy, who had emphasised the need of rationalism and independent judgment before everything else"[3]. Brahmo stress on reason and independent judgment.

Her love for Binoy is neither "love at first sight" nor born out of the conflicts and searching of her own mind, as in the case of Sucharita. Tagore has proved his skill again in depicting this rare

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Heterosexual Relationships in Tagore's The Wreak and Two Sisters

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Abstract

The great characteristic of Tagore's novel is that it frankly deals with man's relations with woman in different aspects. The Wreck presents human frailty (in this case Ramesh's dilly-dallying and wavering nature) human dilemmas and intricacies in human relationships In Two Sisters Tagore has dealt with the problem of psychological maladjustment in married life. These novels explore and analyses different dimensions of intricate heterosexual human relationships.

The great characteristic of Tagore's novel is that it frankly deals with man's relations with woman in different aspects. *The Wreck* show how the Hindu family relationships are based not on the human feelings but on the conventional respect and worship. The novel presents human frailty (in this case Ramesh's dilly-dallying and wavering nature) human dilemmas and intricacies in human relationships.

The great characteristic of Tagore's novel is that it frankly deals with man's relations with woman in different aspects. *The Wreck,* Rabindranath Tagore's second novel is an enactment of the Hindu notion of the sacrosanct nature and inviolability of marital ties. It dramatizes the social and emotional imbroglio that results from the accidental exchange of a bride, a situation not entirely unknown even in modern times as the bride and bridegroom, meeting as strangers for the first time, may fail for some reason or the other to identify each other immediately. Though the novel ends with the affirmation of marital sanctity, the novel has to be viewed not as a mere episodic romance but as a sensitive study of the complex problems and dilemmas which the central characters, Ramesh and Kamala, face after the wreck against the background of the Hindu ideal of marriage. Edword Thompson makes the perceptive comment that *The Wreck* "show how the Hindu family relationships are based not on the human feelings but on the conventional respect and worship".[1]

The Wreck contains a large number of characters. Ramesh a young orthodox Hindu, Hemnalini a undergraduate, Brahmo girl and Kamala a young girl belongs to a orthodox Brahmin family. Nalinaksha a Brahmo Samajist but he dissociates himself from it for the sake of his orthodox mother and is on the lookout for a Bide who would fit in with mother's rigid views an ceremonial purity . He tells his mother.

> ... I had always intended to give you little surprise by bringing you an orthodox little Hindu daughter-in-law. I know quite well that if I married a grown up Brahmo lady name none would be happy.[2]

He comes across Kamala in one of his trips and marries her, only to lose her in the tempest that overturned his boat, the same that hit Ramesh's party. Unable to locate her after the strom, he gives her up as dead. Nearly a year later, he comes to know through Ramesh's confession her story. Kamala Hemnalini has been inducted meanwhile into his house as Haridasi and wins his mother's heart entirely. Nalinaksha himself is deeply impressed by her silent devotion to him and they are united, his brief engagement to Hemnalini proving no obstacle to their union. has been brought up by her father and is deeply attached to him, unlike her Brother Jogendra. Both father and daughter are more or less like friends and deeply concerned about each other. She is more worried about her father's health than her own. In the same way, her father is greatly attached to his daughter and protects her from the rude and

24.	Dr. Shailendra Kumar Singh	

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Tagore's Personality and Popularity

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Abstract

Tagore, a multi - faceted and multi splendored genius a poet, philosopher, prophet, painter, musician, mystic, novelist, essayist and educationist all rolled into one, rests his final vision of life and man on liberal humanism and universality. Rabindranath Tagore's popularity lies in his use of many innovative techniques of novel writing. He was the first Indian novelist to use the flashback technique in the structuring of narrative.

Tagore, a multi - faceted and multi splendored genius a poet, philosopher, prophet, painter, musician, mystic, novelist, essayist and educationist all rolled into one, rests his final vision of life and man on liberal humanism and universality. Whatever else Tagore might have been, he was above everything else a great humanist and Universalist-a true citizen of the world. He believed in one world and in the eternal vision of man evolving into an All-Man, Vishva- Manava. He felt that the West and the East had much to teach each other. "Human values were essentially the same in the West and the East. Human values were more to him than power values, the 'spirit of man' more than the power and the glory of the nation."[1] His world - view was human-centric.

In fact, Tagore treated the problems of his age from the intellectual and philosophical point of view and hence more profoundly. He could see real man stripped of all prejudices and biases and as an incarnation of divinity on earth. It is this assertion of the paramount importance of man and human values above everything else that gives Tagore and his novels a unique place in Indian Literature.

As a living legend in his own time, Tagore projected an image of his personality in which the myth and the man seemed inseparable. A keen aliveness to the happenings around him was one of his fortes and he exhibited to the end of his life a deep interest in all matters concerning humanity in his own country and in the world at large.

Tagore's philosophy of life is based on his emphasis on the development of the human personality and in his inveterate conviction that there is no inherent dichotomy between the claims of the so-called opposite. The flesh and the spirit, the human and the divine, love of life and love of God, joy in beauty and pursuit of truth, social obligation and individual rights, respect for time honored tradition and the freedom to experiment, love of one's people and faith in the unity of mankind. These seeming opposite can and must be reconciled, not by tentative compromises and timid vacillation but by evolving a true harmony out of the apparent discordance.

He loved this earth too well to turn away from it. He was human and humane, a fully developed man responding to both the joy of life and the cry of human distress. He was a lover of his people and at the same time his loyalty was pledged to all mankind. All his life he stood and strove for social justice, equality, material well-being of the poor, self-government of the citizens, education for the ignorant mass, unfettered development of children and equal status of woman with man and thus humanism was all-inclusive encompassing the whole gamut of humanism with all its manifold nuances and ramification. He was a preacher of the religion of man; his renunciation was of the base passions of cupidity and hatred and he fought for the freedom of the human personality from all that strangles and stifle it.

Rabindranath looks at man both from within and from outside. As a greater species of creation, he thinks that the great power within man ignites him to play his role for emancipation of himself through emancipation of the whole of mankind. He introspects that the way of freedom for man is that of the feeling of the divine presence of God who makes him. To him, the true concept of the nature of man is in realization of steadfastness to truth and cultivation of courtesy, simplicity and other virtues that mirror the true culture of man as a social being. The dehumanization of man as seen in all ugliness in all affairs of life has pained Tagore. The best of man as Tagore rightly

25.	Dr. Leena Rawat	

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18

Values
Meaning, Types, Need and Significance

Leena Rawat

The term 'VALUE' has been arises from the Latin word "VALERE" which literary means "to be of worth. Value in general term has been considered as moral ideas, conception of an individual. The term 'Value' was firstly used by a German Philosopher Friedrich Nietzsche in 1880. Till then word value was used as verbs which mean esteem something or measure of something for example value of food, money and labor. It also reflects the orientation towards the world around us in terms of preferences, requirements, attitudes, depositions and sentiments. But many sociologists has described the term in a very particular way which means value is a generalized end that has the literal meaning of goodness or rightness which shows the inherent desirability of any individual. These ends are genuine and are binding by the society. It defines that what is meaningful and what is not. So, the value is a combined conception of what is considered worth full, good and desirable or worthless, bad and undesirable in the culture around us.

The human being requires many things in this word to live happily. The basic necessities of human like food, shelter and clothing which needs most importantly for the survival. When these necessities were satisfied the man moves to satisfy his higher needs which includes social needs, need of security, educational needs, need of self actualization etc. Every human being follows the different path which is dependent on the values a person holds or carries. These values are acquired by an individual from the virtue of his nature and by his nurture (heredity or environment). It arranges the basis for regulating and modifying the behavior in human being and ensures the cooperative well being. A valued person always carry positive connotation and who carry negative connotation are known anti-valued. Many examples of values like loyalty, honesty, equality, wealth, independence and friendliness etc all are generalized end which deliberately pursued by any individual as meaningful to themselves. Clarifying the fundamental values of a society is a challenging

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26.	Dr. Leena Rawat	

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TECHNO-PEDAGOGICAL COMPETENCE - A COMPARATIVE STUDY OF TEACHERS IN FOOT HILLS OF HIMALAYAN

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Abstract:
The technology in 21st century has touched every aspects of human life. The learners are also getting benefitted by implementing the technological intervention programmes in education system. The teachers adopt variety of tools and techniques to make their teaching effective. In this way the technology is considered as most powerful tool in the hand of teachers for making their teaching more attractive and fulfilling the demand of modern era learner. The present study is aimed to study the techno-pedagogical competence among government secondary school teachers working in hilly and plain region of Dehradun district. The multistage random sampling technique was applied to collect the data from both the region. Techno-Pedagogical Competency Scale developed on teachers by Dr. S. Rajasekar and K. Sathiyaraj (2013) is used to collect data. Total 400 secondary school teachers working in hilly and plain region was taken as sample. The findings revealed that the location of schools weather it is hilly or plain does not affect the Techno-pedagogical Competency among secondary school teachers working in Dehradun. The male in comparison to female teachers working in both hilly and plain region are found more techno-pedagogical competent.

Keywords: Techno-pedagogy, Competence, Government Teachers, Hilly & Plain, Himalayan.

INTRODUCTION

In this technological ear the education system has become transactional period of teaching from traditional chalk board to digitalization in teaching or teaching through electronic media. Adopting technological intervention in education system has simulated the potentials of the teachers and creating the young generation to face the challenges of routine life. Technology has enable the students to resolve their day-to-day tasks simply at one click and sitting at home that saves a lot of physical energy and time. The teacher is a role model for students and they follow their ideals. Therefore, it becomes core responsibility of teacher to motivate their learner to adopt latest technologies and which can be done by the technological intervention in teaching learning process. For doing so the teachers need to be technological savvy in nature, should be able to implement the latest innovative techniques of teaching and use of multimedia while framing their lesson plans. The National Curriculum Framework (2005), stated that "ICT if used for connecting children and teacher with scientist working in universities and research institutions would also help in demystifying scientist and their work". In various researches it is revealed that there are many factors which repel teachers to adopt multimedia in implementing their technological skills. It can be geographical conditions, time or cultural or psycho-social environment of the schools. Students also drop-out without completing their secondary education in which innovative use of Information and Communication Technology can potentially solve this problem (Bhattacharya and Sharma, 2007). It is not enough just to merely introducing the technology in education process but it has become necessity for each teacher to posses sound knowledge of technology, pedagogy

27.	Prof (Dr) Pooja Kukreti	

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EFFECTS ON SEASONALITY OF LEAF FALL AND LITTER PRODUCTION OF SAL (*Shorea robusta Gaertn.f.*) IN RESPONSE TO TREE MORTALITY

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ABSTRACT

Mortality of trees is a global phenomenon reported from boreal, temperate and tropical forests. The study was conducted in Barkot Range (Moist Deciduous Forest, Dehradun Forest Division) of Uttarakhand. In the interiors of the forest large scale mortality of the Sal trees occurred with typical dieback of the crown. The paper evaluates changes in litter production and seasonal pattern of leaf fall of Sal with respect to Sal mortality in stressed forest ecosystem. The results conclude that the amount of Sal litter in the mortality site (MS) is significantly less than the non-mortality site (NMS). Reduced litterfall, reduced growth and suspension of seed production; increased longevity of leaves and slower replacement of leaves; greater translocation of nutrients especially nitrogen and potassium is an adaptation to conserve mineral nutrients in response to microclimatic changes in the mortality site, affected by anthropogenic disturbances in the forest corridor.

Keywords: *Disturbances; forest corridor; litter fall; microclimate; Sal mortality; stress*

INTRODUCTION

The stability of the forest corridor and the overall health of the forests are deeply related. Disturbances and fragmentation in the corridor have a direct bearing on the structure and functioning of the system through changes in microclimate. The drastic changes in terms of forest cover and thus change in microenvironment has important implications on the structure, biogeochemical cycling, net ecosystem productivity, litterfall and its decomposition, N mineralisation, conservation strategies of the regional forest (Xuluc-Tolosa et al. 2003, Yadav et al. 2008, Fahrig 2013). The magnitude of the edge effect on various structural and functional ecosystem attributes and the distance the effect penetrates into the forest depends on the land use pattern (roads, agriculture, plantation etc.). Similar microclimatic changes in the interiors of the forest influenced by anthropogenic disturbances in the forest corridor have resulted in mortality of *Sal* (*Shorea robusta* Gaertn.f.) in the Barkot Range of Dehradun Forest Division of Uttarakhand. This study was designed to examine the probable cause(s) of mortality of *Sal* trees in the Barkot Range, Dehradun. During the investigations it was observed that 87.5% of the total *Sal* trees in the mortality site were either partially dead or dead. The diameter class most affected i.e. with large number of dead and dying *Sal* trees was 20-40 cm. The predisposing stress factor for *Sal* mortality in the Barkot forest had been removal of forest cover or corridor. The forest area had been subjected to fragmentation by biotic interference (human) especially through change in

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Uttarakhand Sustainable Development – Dream versus Reality

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Abstract

Uttarakhand, with over 15 important rivers and over a dozen major glaciers, is a valuable freshwater reserve. A large portion of the State is under forests, with several forest-based industries. The State enjoys the great diversity of flora and fauna and is home to rare medicinal, aromatic and herbal plants. Many plant species are endemic to this region. It has almost all agro-geo climatic zones and blessed with beautiful landscapes and pilgrimages attracting tourists from all over the world. This small Himalayan State is thus distinct from other States of the country. Hill model for development was the main battle cry for the Statehood. However, after the formation of the State in 2000 the development has predominantly been in the plains than the hill districts. All the hill districts have subsistence farming as their main economic activity and the livelihood of the weaker sections in the hill areas is completely dependent on the natural resources. The socio-economic model of development, in Uttarakhand, has to be based on region's fragile ecology, culture and mountain specificities to be sustainable in the long run.

Keywords: Sustainable development, Inclusive economic growth, Social equity, Hill ecology, Environmental sustainability

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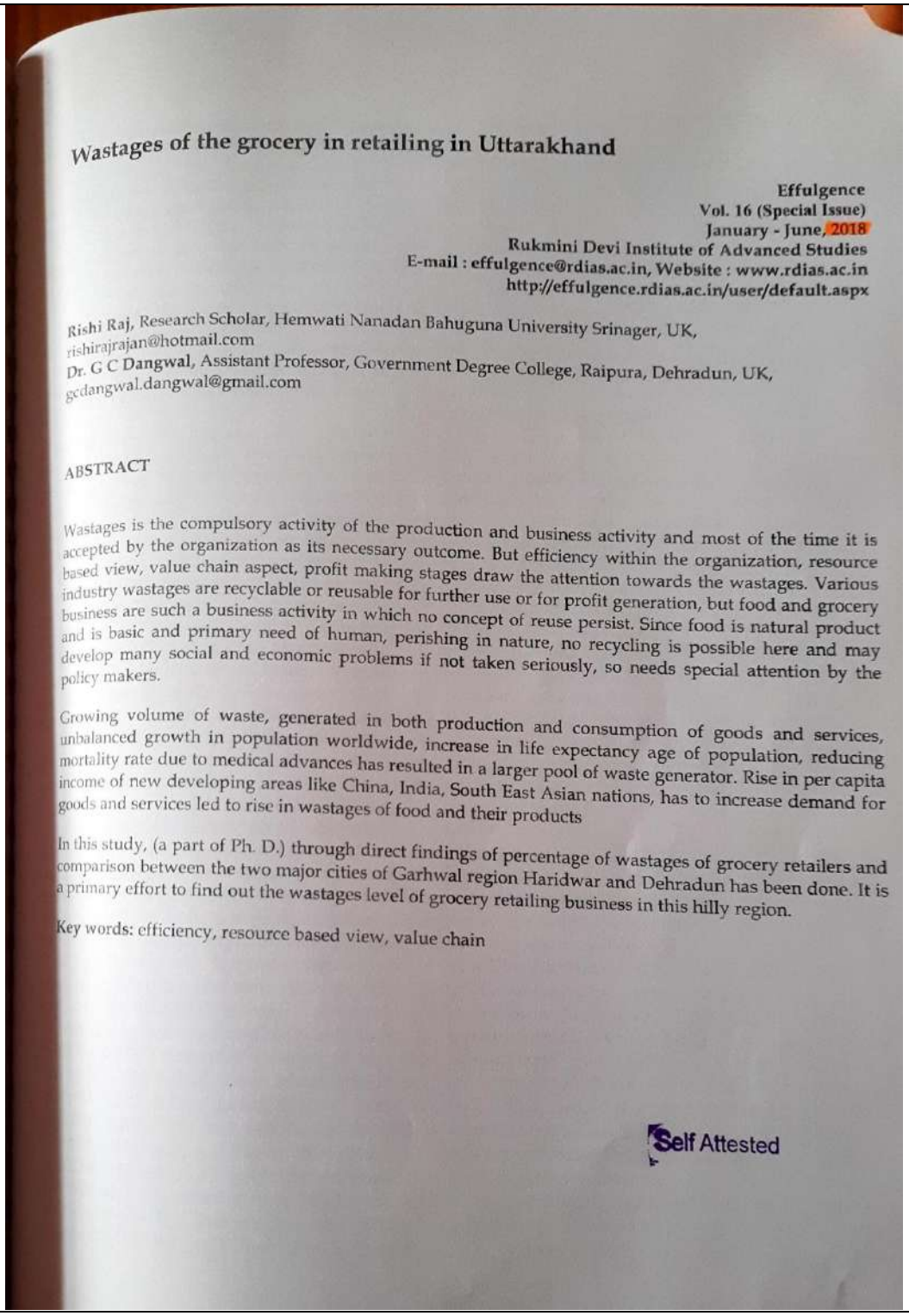
1. Introduction

On **November 9, 2000**, the State of Uttaranchal- the 27th State of India was carved out of Himalayan and adjoining Uttar Pradesh. **January 2007**, the new State was renamed Uttarakhand, meaning "northern region," which was the traditional name for the area. It lies in the northern part of India between the latitudes 28°43' N and 31°27' N and longitudes 77°34' E and 81°02' E, covering an area of 53,483 km^2 of which 86% is mountainous. The elevation in the State has significant spatial variability and ranges from 210 to 7817 m. It shares borders with China (Tibet) in the north, Nepal in the east, and inter-state boundaries with Himachal Pradesh in the west and northwest and Uttar Pradesh in the south. Nine of its 13 districts are mountainous while the remaining four southern districts have substantial portions that are plains. Most of the northern part of the State is covered by high Himalayan peaks and glaciers.

Two of the most important rivers in Hinduism originate in the glaciers of Uttarakhand, the Ganges at Gangotri and the Yamuna at Yamunotri. They are fed by myriad lakes, glacial melts and streams. These two along with Badrinath and Kedarnath form the Chota Char Dham, a holy pilgrimage for the Hindus. Nature has gifted Uttarakhand with abundant resources due to hills, rivers and forests. The State enjoys the great diversity of flora and fauna and is home to more than 175 species of rare medicinal, aromatic and herbal plants.

29.	Prof (Dr) G.C Dangwal	

Wastages of the grocery in retailing in Uttarakhand

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ABSTRACT

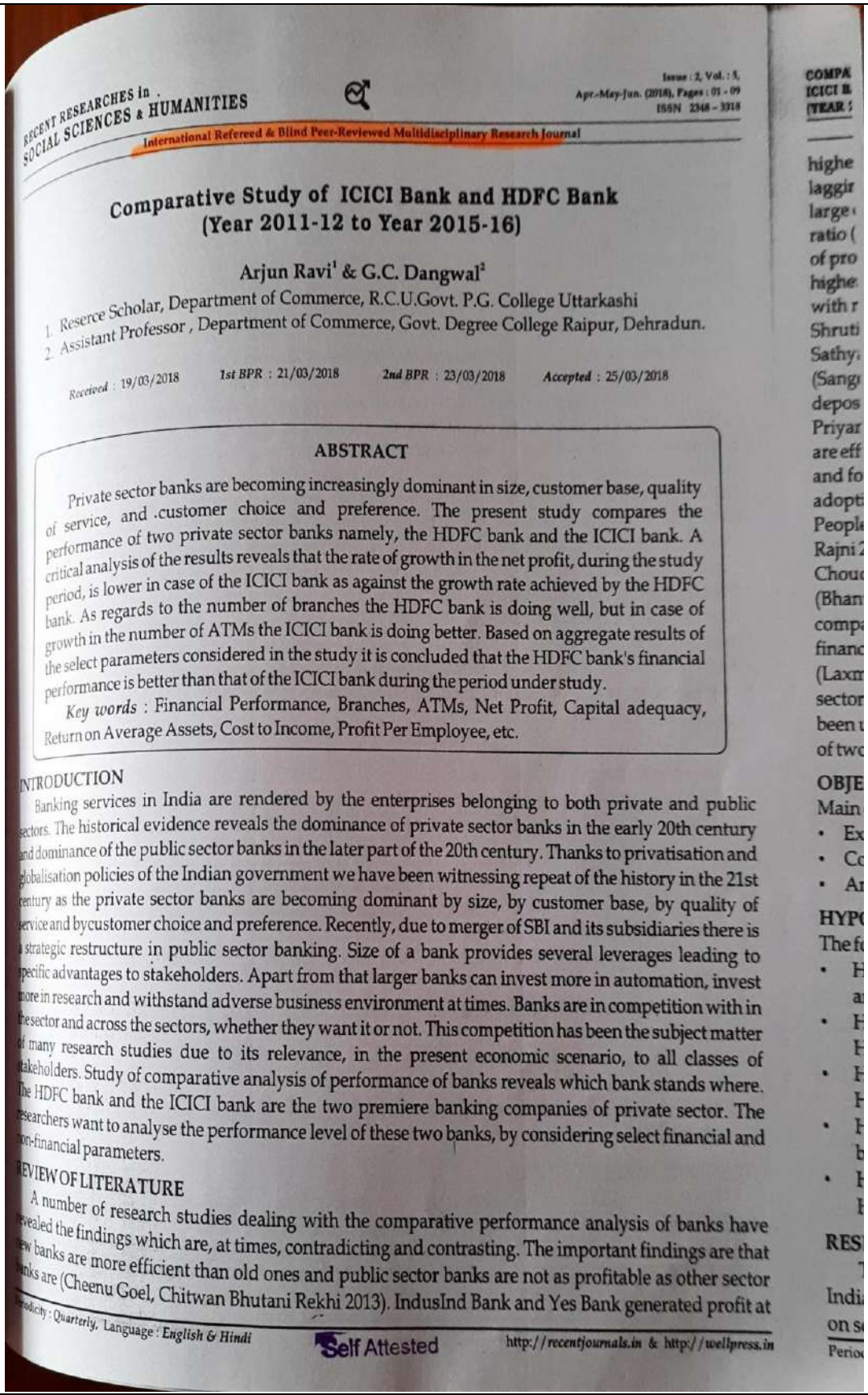
Wastages is the compulsory activity of the production and business activity and most of the time it is accepted by the organization as its necessary outcome. But efficiency within the organization, resource based view, value chain aspect, profit making stages draw the attention towards the wastages. Various industry wastages are recyclable or reusable for further use or for profit generation, but food and grocery business are such a business activity in which no concept of reuse persist. Since food is natural product and is basic and primary need of human, perishing in nature, no recycling is possible here and may develop many social and economic problems if not taken seriously, so needs special attention by the policy makers.

Growing volume of waste, generated in both production and consumption of goods and services, unbalanced growth in population worldwide, increase in life expectancy age of population, reducing mortality rate due to medical advances has resulted in a larger pool of waste generator. Rise in per capita income of new developing areas like China, India, South East Asian nations, has to increase demand for goods and services led to rise in wastages of food and their products

In this study, (a part of Ph. D.) through direct findings of percentage of wastages of grocery retailers and comparison between the two major cities of Garhwal region Haridwar and Dehradun has been done. It is a primary effort to find out the wastages level of grocery retailing business in this hilly region.

Key words: efficiency, resource based view, value chain

Self Attested

30.	Prof (Dr) G.C Dangwal	

RECENT RESEARCHES in SOCIAL SCIENCES & HUMANITIES

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International Refereed & Blind Peer-Reviewed Multidisciplinary Research Journal

Comparative Study of ICICI Bank and HDFC Bank (Year 2011-12 to Year 2015-16)

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ABSTRACT

Private sector banks are becoming increasingly dominant in size, customer base, quality of service, and .customer choice and preference. The present study compares the performance of two private sector banks namely, the HDFC bank and the ICICI bank. A critical analysis of the results reveals that the rate of growth in the net profit, during the study period, is lower in case of the ICICI bank as against the growth rate achieved by the HDFC bank. As regards to the number of branches the HDFC bank is doing well, but in case of growth in the number of ATMs the ICICI bank is doing better. Based on aggregate results of the select parameters considered in the study it is concluded that the HDFC bank's financial performance is better than that of the ICICI bank during the period under study.

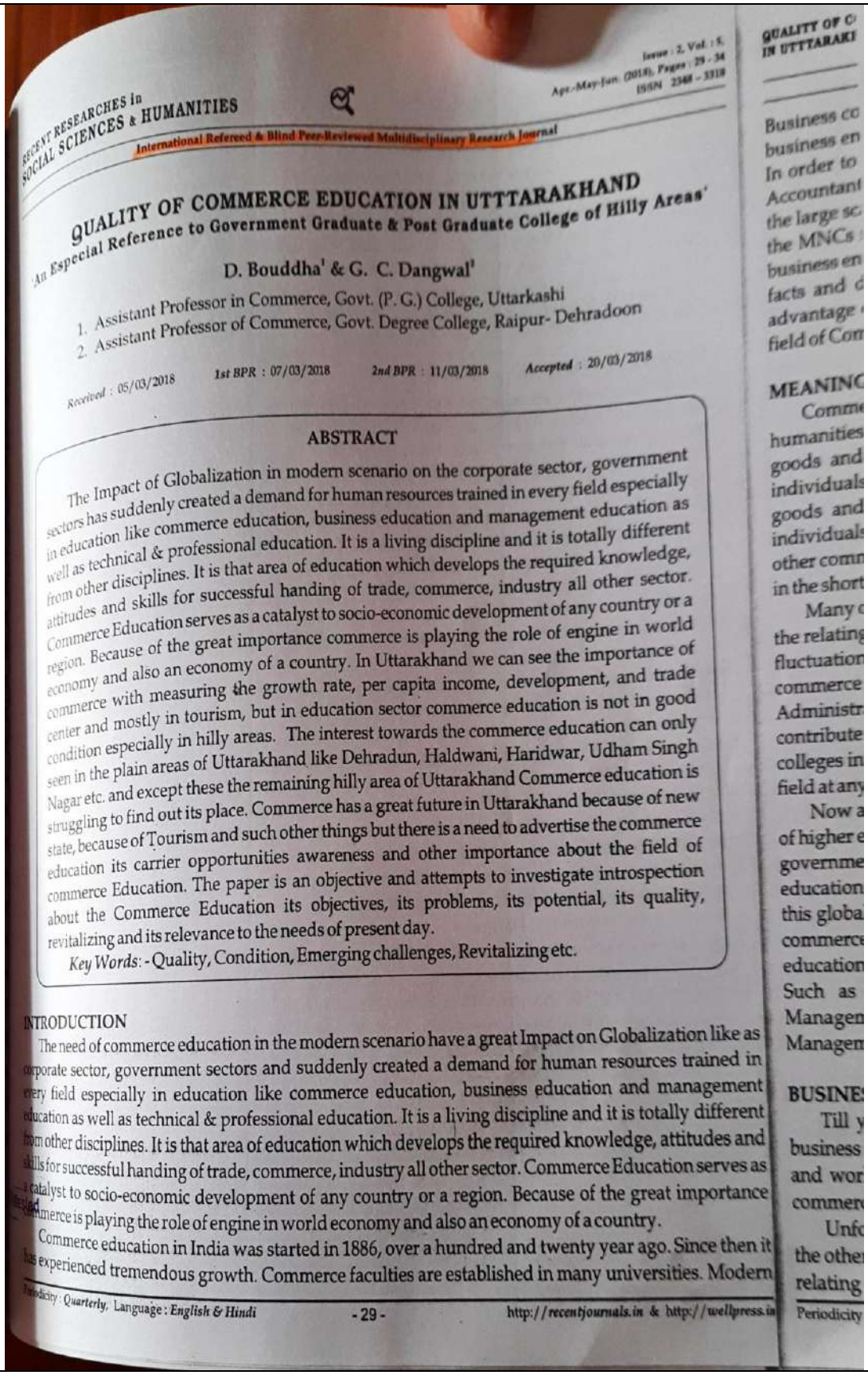
Key words : Financial Performance, Branches, ATMs, Net Profit, Capital adequacy, Return on Average Assets, Cost to Income, Profit Per Employee, etc.

INTRODUCTION

Banking services in India are rendered by the enterprises belonging to both private and public sectors. The historical evidence reveals the dominance of private sector banks in the early 20th century and dominance of the public sector banks in the later part of the 20th century. Thanks to privatisation and globalisation policies of the Indian government we have been witnessing repeat of the history in the 21st century as the private sector banks are becoming dominant by size, by customer base, by quality of service and bycustomer choice and preference. Recently, due to merger of SBI and its subsidiaries there is a strategic restructure in public sector banking. Size of a bank provides several leverages leading to specific advantages to stakeholders. Apart from that larger banks can invest more in automation, invest more in research and withstand adverse business environment at times. Banks are in competition with in the sector and across the sectors, whether they want it or not. This competition has been the subject matter of many research studies due to its relevance, in the present economic scenario, to all classes of stakeholders. Study of comparative analysis of performance of banks reveals which bank stands where. The HDFC bank and the ICICI bank are the two premiere banking companies of private sector. The researchers want to analyse the performance level of these two banks, by considering select financial and non-financial parameters.

REVIEW OF LITERATURE

A number of research studies dealing with the comparative performance analysis of banks have revealed the findings which are, at times, contradicting and contrasting. The important findings are that new banks are more efficient than old ones and public sector banks are not as profitable as other sector banks are (Cheenu Goel, Chitwan Bhutani Rekhi 2013). IndusInd Bank and Yes Bank generated profit at

31.	Prof (Dr) G.C Dangwal	

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QUALITY OF COMMERCE EDUCATION IN UTTTARAKHAND

An Especial Reference to Government Graduate & Post Graduate College of Hilly Areas'

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ABSTRACT

The Impact of Globalization in modern scenario on the corporate sector, government sectors has suddenly created a demand for human resources trained in every field especially in education like commerce education, business education and management education as well as technical & professional education. It is a living discipline and it is totally different from other disciplines. It is that area of education which develops the required knowledge, attitudes and skills for successful handing of trade, commerce, industry all other sector. Commerce Education serves as a catalyst to socio-economic development of any country or a region. Because of the great importance commerce is playing the role of engine in world economy and also an economy of a country. In Uttarakhand we can see the importance of commerce with measuring the growth rate, per capita income, development, and trade center and mostly in tourism, but in education sector commerce education is not in good condition especially in hilly areas. The interest towards the commerce education can only seen in the plain areas of Uttarakhand like Dehradun, Haldwani, Haridwar, Udham Singh Nagar etc. and except these the remaining hilly area of Uttarakhand Commerce education is struggling to find out its place. Commerce has a great future in Uttarakhand because of new state, because of Tourism and such other things but there is a need to advertise the commerce education its carrier opportunities awareness and other importance about the field of commerce Education. The paper is an objective and attempts to investigate introspection about the Commerce Education its objectives, its problems, its potential, its quality, revitalizing and its relevance to the needs of present day.

Key Words: - Quality, Condition, Emerging challenges, Revitalizing etc.

INTRODUCTION

The need of commerce education in the modern scenario have a great Impact on Globalization like as corporate sector, government sectors and suddenly created a demand for human resources trained in every field especially in education like commerce education, business education and management education as well as technical & professional education. It is a living discipline and it is totally different from other disciplines. It is that area of education which develops the required knowledge, attitudes and skills for successful handing of trade, commerce, industry all other sector. Commerce Education serves as a catalyst to socio-economic development of any country or a region. Because of the great importance commerce is playing the role of engine in world economy and also an economy of a country.

Commerce education in India was started in 1886, over a hundred and twenty year ago. Since then it has experienced tremendous growth. Commerce faculties are established in many universities. Modern

32.	Prof (Dr) G.C Dangwal	

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AGRI-TOURISM TECHNO ECONOMIC FEASIBILITY: A CASE STUDY OF HILL DISTRICT UTTARKASHI

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ABSTRACT:

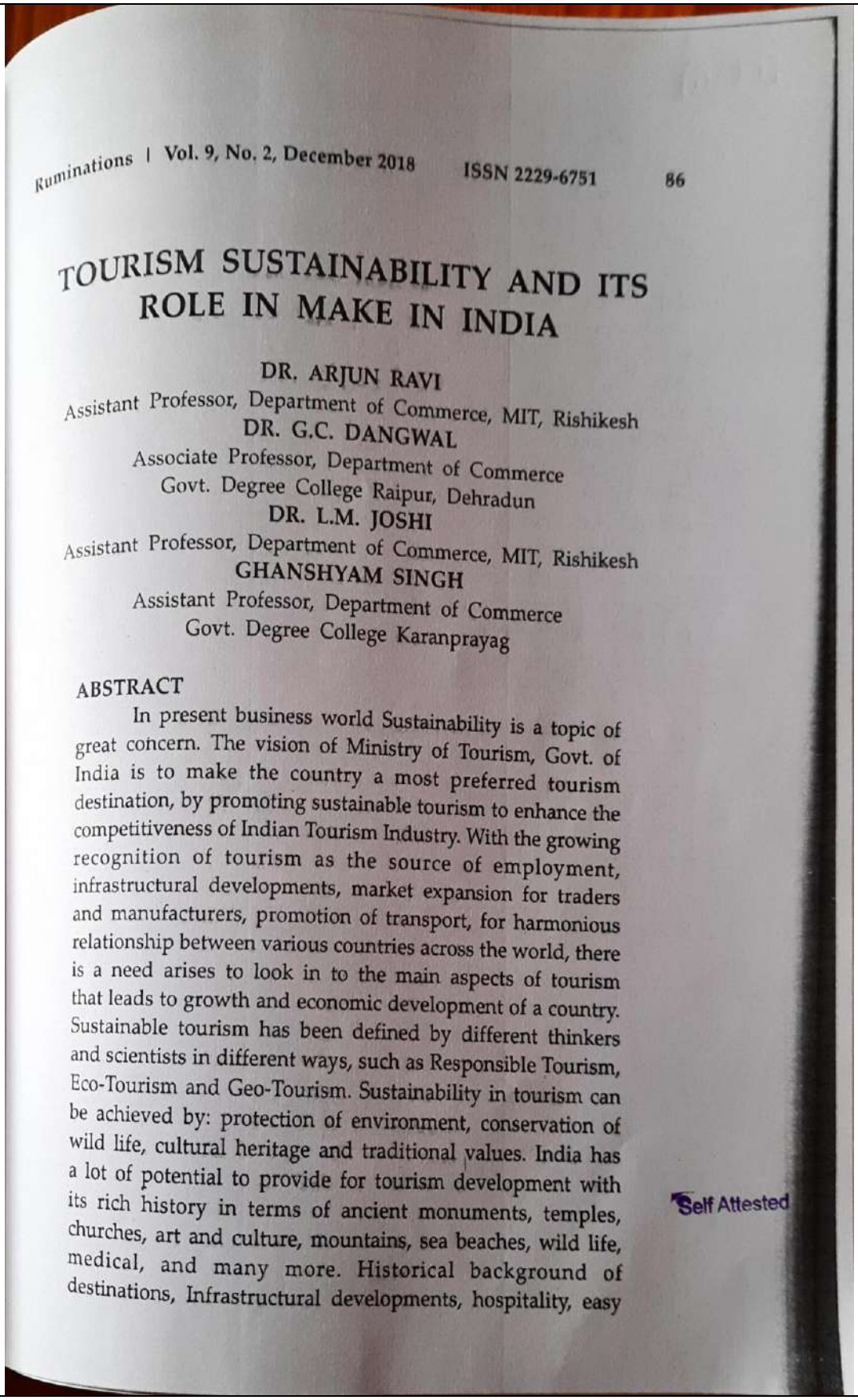
The objective of this paper is to highlights the important features (e.g. economy status, tourism & agriculture) of the Uttarkashi district. Uttarkashi is a boarder district and number one largest district of the uttarakhand. This district having certain feature that makes it distinct from the other district of state, Uttarkashi has subsistence traditional farming as their main economic activity. Due to huge distance from the market and resources their traditional agriculture cannot be lead sector for development. Therefore, the district faces the challenges in the different fields. But the positive features of the district are there having an enormous potential for tourism and suitable climate for the high value agriculture. This has to be the harnessed for the development of this district, Government Should plane a suitable strategy for the development of this district, working towards infrastructure development, tourism and agricultural promotion.

Keywords: Uttarkashi, Economic Status, Agriculture, and Tourism scope or future.

INTRODUCTION:

Uttarkashi district was created on February 24, 1960 out of what then constituted the parganas of Rawain and Uttarkashi of Rawain tahsil of erstwhile Tehri Garhwal district. It sprawls in the extreme north-west corner of the state over an area of 8016 sq. kms. In the ruggedterrain of the mystic Himalayas. On its north lie Himachal Pradesh State and the territory of Tibet and the district of Chamoli in the east. "BARAHAT" The district is named after its headquarters town Uttarkashi, an ancient place with rich cultural heritage and as the name suggests is the Kashi of north (Uttara) held almost as high a veneration as Kashi of the plain

Self Attested

33.	Prof (Dr) G.C Dangwal	

TOURISM SUSTAINABILITY AND ITS ROLE IN MAKE IN INDIA

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ABSTRACT

In present business world Sustainability is a topic of great concern. The vision of Ministry of Tourism, Govt. of India is to make the country a most preferred tourism destination, by promoting sustainable tourism to enhance the competitiveness of Indian Tourism Industry. With the growing recognition of tourism as the source of employment, infrastructural developments, market expansion for traders and manufacturers, promotion of transport, for harmonious relationship between various countries across the world, there is a need arises to look in to the main aspects of tourism that leads to growth and economic development of a country. Sustainable tourism has been defined by different thinkers and scientists in different ways, such as Responsible Tourism, Eco-Tourism and Geo-Tourism. Sustainability in tourism can be achieved by: protection of environment, conservation of wild life, cultural heritage and traditional values. India has a lot of potential to provide for tourism development with its rich history in terms of ancient monuments, temples, churches, art and culture, mountains, sea beaches, wild life, medical, and many more. Historical background of destinations, Infrastructural developments, hospitality, easy

Self Attested

34.	Prof (Dr) G.C Dangwal	

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DEVELOPMENT OF ENTREPRENEURSHIP IN GARHWAL HILLS - A STUDY OF UTTARAKHAND STATE

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ABSTRACT

Economic development of any region is an outcome of purposeful activity. A man assumes various role in the development process, namely as organizer of human capital, natural material, resources, worker and consumer. He stands at the centre of the whole process of economic development. Schumpeter explain, economic development consists of "Employment resources in a different way" in making new combination of the means of production. The entrepreneur locates ideas and put them into effect in the process of economic development.

The development of an economy is directly proportional to the level of entrepreneurship in that Economy. If the level of entrepreneurship is high in an economy it may have a high level of production inspite of the lower availability of other factors of production. On the other hand, an economy with abundant means of production if entrepreneurial activities are lacking the level of economic development will be low and all the resources will remain unused.

The present newly created Uttarakhand state is situated in central Himalaya, which considered to have a dense forest area, and is an abode of Gods and Goddess and natural shelter for various wild animals. It is also a cultural confluence for various group those have come down from the Central Asia in the North and the Gangetic plain in the South. It extends from the river Tons and river Yamuna in the west to the river of Kali (Sharda) in the east. Its northern limit is demarcated by Indo-Tibet water parting ridge and southern bounding is separating it from Bijnor, Muradabad, Bareilly, Rampur and Pilibhit Districts.

Self Attested

35. Prof (Dr) Vijendra Lingwal

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Dielectric Properties of Potassium Doped Sodium Tantalate Ceramic

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Abstract: **Pellet samples of sodium-potassium tantalate ($Na_{1-x}K_xTaO_3$) mixed system (for x = 0, 0.2, 0.4, 0.5, 1) compositions were prepared using solid state reaction method. Samples were prepared by pressing the calcined mixture at 0.2 MPa and sintered in a tube furnace opened at both ends. Prepared samples were characterized by x-ray diffraction (XRD) and energy dispersive x-ray analysis (EDAX) method. In the XRD patterns, shifting of most intense peaks, to lower angle was observed with increasing x value in the prepared compositions; except for x = 0.5, where a break in the peak shifting pattern was observed. Lattice parameters and crystallite size for different compositions were calculated from the XRD data. EDAX results show marked sodium escaping from the prepared samples. Frequency and x dependence of dielectric constant, loss tangent and dielectric conductivity have been studied in the frequency range from 0.01 MHz to 10 MHz, at room temperature. With increasing frequency dielectric constant and loss tangent were found decreasing, which indicate relaxational behaviour of this system. Dielectric constant was observed decreased for the compositions with x = 0.2 and 0.5 with respect to their nearby x, showing morphotropic phase transitions in these regions; however, loss tangent and dielectric conductivity were observed decreased only for x = 0.5 composition.**

Keywords: **Ferroelectrics, perovskite, dielectric constant, loss tangent, sintering.**

I. Introduction

The perovskite (ABO_3) type alkali metal niobates and tantalates constitute an important group of oxide compounds with broad range of technologically important dielectric, piezoelectric, ferroelectric and optoelectronic properties [1]. Among these compounds sodium potassium niobate ($Na_{1-x}K_xNbO_3$) and sodium potassium tantalite ($Na_{1-x}K_xTaO_3$) have attracted considerable attention. Solid solutions can be formed over the whole composition range (x = 0 to 1), allowing a high degree of tailorability of physical properties for these mixed oxides. For low x values these systems appear to exhibit true phase transitions and the dielectric properties can be understood in terms of soft optic phonons [2, 3].

Interest has centered on $Na_{1-x}K_xTaO_3$ system, especially in relation to quantum effects, suppression of the phase transition and the question of long-range order *vs* glasslike behavior [4]. $Na_{1-x}K_xTaO_3$ system has interesting end members, i.e., $NaTaO_3$ is ferroelectric and $KTaO_3$ is paraelectric, at room temperature [5]. Davis [3] has observed that, for $x \geq 0.70$, this system shows a single phase transition from the high temperature cubic paraelectric phase to a tetragonal ferroelectric phase (CT). For $0.70 \geq x \geq 0.45$, it shows two ferroelectric transitions, a cubic to tetragonal transition followed by a lower temperature transition to a phase believed to have an orthorhombic symmetry [3]. Samara [1] has found the pressure dependence of CT transition, in $Na_{0.28}K_{0.72}TaO_3$ single crystal, consistent with the soft mode theory.

$Na_{1-x}K_xTaO_3$ is a comparatively less studied system. Investigators have studied the low temperature dielectric behavior of $Na_{1-x}K_xTaO_3$ single crystals [1, 3]. In the present study observations on dielectric properties of the mixed $Na_{1-x}K_xTaO_3$ system for different compositions (x = 0, 0.2, 0.4, 0.5, 1), at room temperature, were carried out.

II. Preparation

In the present study samples were prepared with conventional solid-state reaction method. The starting materials, used for preparing $Na_{1-x}K_xTaO_3$ system, were sodium carbonate (Na_2CO_3), potassium carbonate (K_2CO_3) and tantalum pentoxide (Ta_2O_5). The purity of all the starting materials was 99.95%. The starting materials were initially dried, at 150 ^{0}C, to remove the absorbed moisture. K_2CO_3 is a hygroscopic material and hence due care was taken in its handling. Different compositions of $Na_{1-x}K_xTaO_3$ (x = 0, 0.2, 0.4, 0.5, 1) were prepared by weighing the starting materials in stoichiometric ratio. Each composition was manually dry mixed for 1 hour and with methyl alcohol for another 1 hour using agate mullet mortar and pestle. The mixture was calcined in an alumina crucible, in ambient atmosphere, at 950 ^{0}C for 2 hours, to remove carbonates present in the mixture. After cooling, in dry air, the calcined mixture was weighed to ensure complete carbonate removal from the mixture. Calcined mixture was pressed at 0.2 MPa to form the pellets of 6 mm diameter. These raw pellets were sintered in a tube furnace opened at both ends. All the pellet samples, except $NaTaO_3$, were placed in an alumina crucible and sintered at 1050 ^{0}C, for 15 hours. $NaTaO_3$ pellets were sintered at 1100 ^{0}C for 15 hours, due to their high melting

36. Prof (Dr) Vijendra Lingwal

Temperature Dependence of Dielectric Properties in Doped Perovskites

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[2]Deparment of Physics, Govt. PG College New Tehri, Uttarakhand, India
[3]University Science Instrumentation Centre, HNB Garhwal University, Srinagar (Garhwal), India

ABSTRACT

Pellet samples of mixed sodium-potassium tantalate ($Na_{1-x}K_xTaO_3$), for compositions x = 0, 0.2 and 0.5 were prepared by solid-state reaction method. The calcined mixture was pressed at 0.02 MPa and sintered in a closed furnace to form 6 mm diameter pellets. Temperature variation of dielectric constant and loss tangent of the prepared samples has been studied in the frequency range from 10 KHz to 1 MHz. Dielectric anomalies have been observed near the transition temperatures of the samples. Dielectric constant and loss tangent peak heights were observed decreasing with increasing frequency, for all the compositions, which show relaxational behavior of the material.

Keywords – Dielectric constant, loss tangent, perovskites, relaxational behavior, transition temperature.

1. INTRODUCTION

Study of dielectric constant and loss tangent provides insight to the understanding of intra- and inter-molecular interactions, modes of motion and configurational changes in a solid. The perovskite (ABO_3) type alkali metal niobates and tantalates constitute an important group of oxide compounds with broad ranges of technologically important dielectric, piezoelectric, ferroelectric and optoelectronic properties[1]. Solid solutions of sodium potassium niobate ($Na_{1-x}K_xNbO_3$) and sodium potassium tantalate ($Na_{1-x}K_xTaO_3$) can be formed over the whole composition range (x = 0 to 1), which allow a high degree of tailorability of physical properties. For low x values, these systems appear to exhibit true phase transitions and their dielectric properties can be understood in terms of soft optic phonons[2-3].

Interest has centered on $Na_{1-x}K_xTaO_3$ system, especially in relation to quantum effects, suppression of the phase transition and the question of long-range order *vs* glasslike behavior[4]. $Na_{1-x}K_xTaO_3$ system has interesting end members, i.e., $NaTaO_3$ is ferroelectric with ilmenite structure at room temperature and a transition temperature (T_c) ~ 475°C, and $KTaO_3$ is paraelectric, at room temperature[5]. Na in $KTaO_3$ occurs as an off-centre impurity and makes $KTaO_3$ a wide gap incipient ferroelectric. Davis[3] has observed that, for $x \geq 0.70$, this system shows a single-phase transition from the high temperature cubic paraelectric phase to a tetragonal ferroelectric phase (CT). For $0.70 \geq x \geq 0.45$, it shows two ferroelectric transitions, a cubic to tetragonal transition followed by a lower temperature transition to a phase believed to have an orthorhombic symmetry[3]. Samara has found the pressure dependence of CT transition, in $Na_{0.28}K_{0.72}TaO_3$ single crystal, consistent with the soft mode theory[1].

$Na_{1-x}K_xTaO_3$ is a relatively less studied system. Investigators have studied the low temperature dielectric behavior of $Na_{1-x}K_xTaO_3$ single crystals[1, 3] and high temperature phases, conductivity and structure of $NaTaO_3$ and $KTaO_3$[6, 7]. In the present study dielectric measurements on $Na_{1-x}K_xTaO_3$ pellet samples, for different x values, in the temperature range from 50 to 680 °C, have been carried out.

37.	Prof (Dr) Vijendra Lingwal	

Theoretical Investigation of Dielectric Properties of Potassium Mixed Sodium Niobate Crystals

Vijendra Lingwal[1], A S Kandari[2] & N S Panwar[3]

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[2]Deparment of Physics, Govt. PG College New Tehri, Uttarakhand, India.
[3]University Science Instrumentation Centre, HNB Garhwal University, Srinagar (Garhwal), India.

ABSTRACT

Using experimental observed dielectric and loss behavior of potassium mixed sodium niobate crystals the temperature dependence of soft mode frequency, width, relaxation time, order parameter, fourth order coupling coefficients and anharmonic constants have been calculated. Anomaly has been observed in the behavior of soft mode frequency, width, relaxation time, and order parameter, near the transition temperatures in this compound.
Keywords – Hamiltonian, perovskites, soft mode, relaxational behavior, transition temperature.

1. INTRODUCTION

The perovskite type- ABO_3 crystals observe structural phase transition from the high temperature cubic phase to the low temperature tetragonal, rhombohedral (trigonal) or orthorhombic phase. The phase transition in perovskite crystals is, generally, assumed to be due to the instability of the temperature dependent low frequency optical phonon at transition temperature [1-3]. Depending on the relative magnitude of anharmonic interaction coefficients, different structural phases occur. By displacement of ions from special positions of the lattice of crystals having distorted perovskite structure several modes are involved in various transitions. Pytte [4] has proposed a model Hamiltonian to describe the ferroelectric transition in ABO_3 type compounds in terms of localized normal mode coordinates, elastic strains and large wavelength acoustic phonons. Expressions for free energy and normal mode frequencies have been obtained to describe the phase transition in these compounds, but the dielectric and other related properties could not be explained due to an early decoupling of various correlations in this study. Panwar and Semwal [5] modified the pytte's Hamiltonian in terms of creation and annihilation operators. Using the systematic Green's function method and Dyson's equation the normal phonon frequencies, width and soft mode dynamics of perovskite type crystals were evaluated [5-8].

In the present study, temperature dependence of phonon frequency, width, order parameter, fourth order coupling coefficient and anharmonic constants of potassium mixed sodium niobate crystals have been calculated by correlating the theoretical expressions with the experimental results on dielectric measurements.

2. THEORY

Using the model Hamiltonian [5-8], double time thermal Green's function [9] method and Dyson's equation [10], renormalized soft phonon frequency and width have been calculated [5]. Using the Kubo formalism [11], the real part of the dielectric constant is given as:

38.	Prof (Dr) Vijendra Lingwal	

Theoretical Investigation of Dielectric Properties of $KNbO_3$ Crystals

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[2]Department of Higher Education, MHRD, New Delhi
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ABSTRACT

Using experimental observed dielectric and loss behavior of potassium niobate crystals the temperature dependence of soft mode frequency, width, relaxation time, order parameter, fourth order coupling coefficients and anharmonic constants have been calculated. Anomaly has been observed in the behavior of soft mode frequency, width, relaxation time, and order parameter, near the transition temperatures in this compound.
Keywords *– Hamiltonian, perovskites, soft mode, relaxational behavior, transition temperature.*

1. INTRODUCTION

The perovskite type- ABO_3 crystals observe structural phase transition from the high temperature cubic phase to the low temperature tetragonal, rhombohedral (trigonal) or orthorhombic phase. The phase transition in perovskite crystals is, generally, assumed to be due to the instability of the temperature dependent low frequency optical phonon at transition temperature [1-3]. Depending on the relative magnitude of anharmonic interaction coefficients, different structural phases occur. By displacement of ions from special positions of the lattice of crystals having distorted perovskite structure several modes are involved in various transitions. Pytte [4] has proposed a model Hamiltonian to describe the ferroelectric transition in ABO_3 type compounds in terms of localized normal mode coordinates, elastic strains and large wavelength acoustic phonons. Expressions for free energy and normal mode frequencies have been obtained to describe the phase transition in these compounds, but the dielectric and other related properties could not be explained due to an early decoupling of various correlations in this study. Panwar and Semwal [5] modified the Pytte's Hamiltonian in terms of creation and annihilation operators. Using the systematic Green's function method and Dyson's equation the normal phonon frequencies, width and soft mode dynamics of perovskite type crystals were evaluated [5-8].

In the present study, temperature dependence of phonon frequency, width, order parameter, third and fourth order coupling coefficient and anharmonic constants of potassium niobate crystals have been calculated by correlating the theoretical expressions with the experimental results on dielectric measurements.

2. THEORY

Using the model Hamiltonian [5-8], double time thermal Green's function [9] method and Dyson's equation [10], renormalized soft phonon frequency and width have been calculated [5]. Using the Kubo formalism [11], the real part of the dielectric constant is given as:

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Bochner curvature Tensor $\tilde{B}$ on cosymplectic manifold

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ABSTRACT

Tokagi, H and Watanabe [1] Yano, Y. [2], Mishra, R.S. [3], Pandey [4], Tachibana, S. [5] etc., have studied Bochner Curvature tensor, The studies of Cosymplectic manifold with orthogonal basis equipped with different structure have been made by Yano [2], Tokagi [1] and Mishra[3]. Here we have discussed Cosymplectic manifold M_n (n=2m+1) possessing the orthonormal basis $\{e_i, Fe_i\}$, i =1, 2, 3————2m of unit vector which are normal to the contact vector T, we have obtained the expression relating the sectional curvature and scalar curvature in Bochner curvature tensor $\tilde{B}$.

Key Words: Bochner Curvature tensor $\tilde{B}$, Cosymplectic manifold, orthonormal basis, almost contact metric (almost Grayan) manifold, Sectional curvature etc.

INTRODUCTION

Let M_n , n = 2m+1 be an almost contact metric (almost Grayan) manifold equipped with an almost contact metric structure {F, T, A, g} satisfying:

(1.1) (a) $F^2 X = - X + A(X) T$
(1.1) (b) $A(FT) = 0$
(1.1)(c) $FT = 0$
(1.1)(d) $A(T) = 0$
(1.2)(a) $g(\bar{X}, \bar{Y}) = g(X,Y) - A(X)A(Y)$
(1.2)(b) $g(T, X) = A(X)$
(1.2)(c) $'F(X, Y) \cong g(\bar{X}, Y) = - g(X,\bar{Y}) = - 'F(Y, X)$

Where

(1.2)(d) $\bar{X} \cong FX$,

For all C^∞ vector fields X, Y in M_n, here F is a structure tensor of type(1, 1), A is a 1- form, T is a contravariant vector field associated with A, g is a fundamental metric tensor and 'F is a fundamental 2- form.

Let D be a Levi - cevita or Riemannian curvature tensor in M_n . If in M_n the structure tensor F and the contact form A are covariantly constant i.e.

(1.3) $(D_x F)(Y) = 0$
(1.4)(a) $(D_x A)(Y) = 0$
(1.4)(b) $D_x T = 0$

Then M_n is called a Cosymplectic Manifold [2] and [3].

Contact Bochner curvature tensor $\tilde{B}$ [2] is given by

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(1.5) $'\tilde{B}(X,Y,Z,W) \cong g(B(X,Y,Z),W)$
$= 'K(X,Y,Z,W) + g\{g(X,W) - A(X)A(W)\}'L(Y,Z) - \{g(Y,W) - A(Y)A(W)\}'L(X,Z)$
$+\{g(Y,Z) - A(Y)A(Z)\}'L(X,W) - \{g(X,Z) - A(X)A(Z)\}'L(Y,W) + 'F(Y,Z)'M(X,W)$
$- 'F(X,Z)'M(Y,W) + 'F(X,W)'M(Y,Z) - 'F(Y,W)'M(X,Z) - 2\{'M(X,Y)'F(Z,W)$
$+'F(X,Y)'M(Z,W)\} + \{'F(X,W)'F(Y,Z) - 'F(Y,W)'F(X,Z) - 2'F(X,Y)'F(Z,W)\}$

where

(1.6)(a) $'K(X,Y,Z,W) \cong g(K(X,Y,Z),W)$
(1.6)(b) $'L(Y,Z) \cong g(L(Y),Z)$
$= -\frac{1}{2(m+2)} \{Ric(Y,Z) + (L+3)g(Y,Z) - (L-1)A(Y)A(Z)\}$
(1.6)(c) $Ric(Y,Z) = g(K(Y),Z) = C_1^1 K(X,Y,Z)$
(1.6)(d) $k = \cong C_1^1 K(Y)$

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Hyper Surfaces of Almost Co- Quaternion Manifold–I

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ABSTRACT

Hashimoto [1], Yano, Ishihara and Konishi [2] ,Pandey[4], etc. have studied almost Co –Quaternion manifold and their properties. The studies of Almost Quaternion manifolds equipped with different structure have been made by Ishihara [5], Mishra [3] and pandey[4].

In this paper, we have studied the Hypersurfaces of almost- Co-Quaternion manifolds and have shown that the hypersurfaces of Almost Co- Quaternion manifold M_n ,(n =4m +1) is an almost Co- Quaternion manifold M_{4n}. if the structure contact vector T in M_{4n+1} is normal to M_{4n} . we have also proved that the hypersurfaces of Quaternion Cosymplectic manifold is a Quaternion Kahler manifold.

Key Words:Hypersurfaces of almost- Co-Quaternion manifolds,Quaternion Cosymplectic manifold,Quaternion Kahler manifold, Einstein' s Summation convention,induced Riemannian connection etc..

Let M_n ,(n =4m +1) is an almost Co- Quaternion metric manifold with structure bundle $\{F_\alpha, A^\alpha, T_\alpha, g\}$, ($\alpha$ = 1,2,3) satisfying the following equation [2], [4]

(1.1) $\epsilon_{\alpha\beta\gamma} F_\gamma = F_\alpha F_\beta + \delta^\beta_\alpha I_n - A^\beta \oplus T_\alpha$,

Whereα, β, γ , run from 1 to 3 and $\epsilon_{\alpha\beta\gamma}$ is equal to 1, if (α, β, γ) are in symmetric permutation of (1,2,3), otherwise, it is equal to zero

(1.2)(a) $\epsilon_{\alpha\beta\gamma} A^\gamma(X) = A^\alpha(F_\beta X)$

(1.2)(b) $\epsilon_{\alpha\beta\gamma} T_\gamma = F_\alpha T_\beta$

(1.2)(c) $A^\beta T_\alpha = \delta^\beta_\alpha \begin{cases} 1, if\ \beta = \alpha \\ 0, if\ \beta \neq \alpha \end{cases}$

Also, we have

(1.3)(a) $A^\alpha \stackrel{def}{=} g(T_\alpha, X)$

(1.3)(b) $'F_\alpha(X,Y) \stackrel{def}{=} g(F_\alpha X, Y) = -\ 'F_\alpha(Y,X)$

(1.3)(c) $'F_\alpha(F_\beta X F_\gamma Y) = \delta^\beta_\alpha\ 'F(X,Y) + \epsilon_{\alpha\beta\delta}\epsilon_{\gamma\rho\delta}\ 'F_\rho(X,Y) + A^\beta(X)A^\alpha(F_\gamma Y)$

$- A^\gamma(Y) + A^\alpha(F_\beta Y)$

AGREEMENT (1.1): Einstein' s Summation convention does not hold for $\alpha, \beta, \gamma, \delta, \rho$.

AGREEMENT (1.2): In the above and in what follows, the X,Y,Z..... are vector fields in M_n .

DEFINITION (1.1): An almost Co-Quaternion metric manifold is called a Quaternion Cosymplectic (Q.C.) manifold, if

(1.4)(a) $(E_X F_\alpha)(Y) = U^\beta_\alpha$ $F_\beta(Y)$

(1.4)(b) $(E_X A^\alpha)(Y) = -\ U^\beta_\alpha$ $A^\beta(Y)$

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41.	Prof (Dr) Savita Verma	

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On Cosymplectic manifold with H-Conharmonic curvature tensor $\tilde{S}$

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ABSTRACT

Tokagi, H and Watanabe [1] Yano, Y. [2], Mishra, R.S. [3], Pandey [4], Tachibana, S. [5] etc., have studied H-Conharmonic Curvature tensor$\tilde{S}$, The studies of Cosymplectic manifold with orthogonal basis equipped with different structure have been made by Yano [2], Tokagi [1] and Mishra[3],Here we have discussed Cosymplectic manifold M_n (n=2m+1) possessing the orthonormal basis $\{e_i, Fe_i\}$, i =1, 2, 3———2m of unit vector which are normal to the contact vector T, we have obtained the expression relating the sectional curvature and scalar curvature in H-Conharmonic curvature tensor$\tilde{S}$.

Key Words: H-Conharmonic Curvature tensor$\tilde{S}$, Cosymplectic manifold, orthonormal basis, almost contact metric (almost Grayan) manifold, Sectional curvature etc.

INTRODUCTION

Let M_n , n = 2m+1 be an almost contact metric (almost Grayan) manifold equipped with an almost contact metric structure {F, T, A, g} satisfying:

(1.1) (a) $F^2 X = -X + A(X) T$

(1.1) (b) $A(FT) = 0$

(1.1)(c) $FT = 0$

(1.1)(d) $A(T) = 0$

(1.2)(a) $g(\bar{X},\bar{Y}) = g(X,Y) - A(X)A(Y)$

(1.2)(b) $g(T, X) = A(X)$

(1.2)(c) $'F(X, Y) \cong g(\bar{X}, Y) = -g(X,\bar{Y}) = -'F(Y, X)$

Where

(1.2)(d) $\bar{X} \cong FX$,

For all C^∞ vector fields X, Y in M_n, here F is a structure tensor of type(1, 1), A is a 1- form, T is a contravariant vector field associated with A, g is a fundamental metric tensor and 'F is a fundamental 2- form. Let D be a Levi - cevita or Riemannian curvature tensor in M_n . If in M_n the structure tensor F and the contact form A are covariantly constant i.e.

(1.3) $(D_x F)(Y) = 0$

(1.4)(a) $(D_x A)(Y) = 0$

(1.4)(b) $D_x T = 0$

Then M_n is called a Cosymplectic Manifold [2] and [3].

H-Conharmonic curvature tensor $\tilde{S}$is given by[5]

(1.5) $\tilde{S}(X,Y,Z,W) \cong g(\tilde{S}(X,Y,Z),W)$

$= 'L(X,Y,Z,W) - \frac{1}{n+4}\{Ric(X,Z)g(Y,W) - Ric(Y,Z)g(X,W) + Ric(\bar{X},Z)'F(Y,W)$

$- Ric(\bar{Y},Z)'F(X,W) + 2Ric(\bar{X},Y)'F(Z,W)\}$

(1.6) $'\tilde{L}(X,Y,Z,W) \cong g(\tilde{L}(X,Y,Z),W)$

$= 'K(X,Y,Z,W) - \frac{1}{n+4}\{Ric(X,W)g(Y,Z) - Ric(Y,W)g(X,Z) + Ric(\bar{X},W)'F(Y,Z)$

$- Ric(\bar{Y},W)'F(\bar{X},Z) - 2Ric(Z,W)'F(X,Y)\}$

Where

(1.7)(a) $'K(X,Y,Z,W) \cong g(K(X,Y,Z),W)$

(1.7)(b) $'L(Y,Z) \cong g(L(Y),Z)$

$= -\frac{1}{2(m+2)}\{Ric(Y,Z) + (L+3)g(Y,Z) - (L-1)A(Y)A(Z)\}$

(1.7)(c) $Ric(Y,Z) = g(K(Y),Z) = C_1^1 K(X,Y,Z)$

(1.7)(d) $k = \cong C_1^1 K(Y)$

42.	Prof (Dr) Madhu Thapliyal	

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Role of Fatty Acids/Fat Soluble Component from Medicinal Plants Targeting BACE Modulation and Their Role in Onset of AD: An *in-silico* Approach

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Abstract

Fatty acids have been reported in several researches targeting cure and treatment of Alzheimer's disease (AD). Besides having so many contradictory reports about fatty acids related to the issues of human health, there are many evidences that point towards the beneficial effects of PUFAs and essential fatty acids on human health, even in AD. This study investigated the interaction of fatty acids and phyto-constituents for the inhibition of BACE enzyme (mainly responsible and prominent target for amyloid hypothesis) through *in-silico* approach. Phyto-compounds from *Picrorhiza kurroa, Cinnamomum tamala, Curcuma longa, Datura metel, Rheum emodi* and *Bacopa monnieri*, which are well known, were screened. For screening of drug molecules, Lipinski's rule is usually used. Because of this rule compounds like Bacoside A, Bacoside A3, Bacopaside II, Bacopasaponin C, Baimantuoluoline C, Daturametеline A, Cucurbitacin B, Cucurbitacin D, Cucurbitacin E, Cucurbitacin I, Cucurbitacin F, Cucurbitacin R, Picroside III, Kutkoside, Picroside II are usually excluded from docking/binding studies because of their higher molecular weight as they do now follow the Lipinski's rules. The same applies to fatty acids, like Linolinic acid. On the basis of *in-silico* experiments, our study suggests that certain polyunsaturated fatty acids (PUFA) and some saturated fatty acids of medicinal plants can have BACE inhibition activity and can possibly modulate Aβ formation. Our study also suggests that compounds that are excluded by Lipinski's rule/filter during bioinformatics based screening due to their molecular weight should also be tested in experiments as we hypothesize that Lipinski's rule is not absolute.

Keywords- Fatty Acids, PUFA, Alzheimer's disease, BACE, Amyloid beta, phyto constituents, Lipinski's rules.

1. Introduction

Fatty acids are building blocks of more complex lipids and are an important class of biochemical molecules. Fatty acids serve as both energy substrates in form of triglycerides and integral membrane components. Without having these fatty acids biomolecules, the biological entity cannot be imagined. Plasma membranes of all cells are made up of major fraction of lipids and different cells can have different amounts as well as different fatty acids in them. Neural plasma membranes are composed of glycerophospholipids, sphingolipids, cholesterol, and proteins. Glycerophospholipids and sphingolipids contain nonpolar fatty

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43.	Prof (Dr) S.C Nautiyal	

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RESEARCH ARTICLE

Study of Electrical Properties of Ferrofluids

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Abstract: Study of electrical properties of ferrofluid have been carried out on a water based ferrofluid, dielectric constant, loss tangent and electrical conductivity have been measured with the help of a R C L meter at 0.1, 1, 10, 100 and 1000 KHz frequencies at room temperature. The results have been plotted in the graphs and discussed.

Keywords: Ferrofluids, Dielectric constant, Loss tangent, Cole-Cole plot

Introduction

A ferrofluid is a fluid comprising colloidal suspension of ultra fine magnetic particles of the order of the range 10-1000° A size. To prevent each magnetic grain from clustering together and to maintain a true colloidal dispersion, it is coated with suitable surfactants like oleic acid and some fatty acids. Ferrofluids are widely used in many engineering devices such as magnetic seal, dampers and sensors[1,2]. Ferrofluids are also found to be useful for many biomedical applications[3,4].

A ferrofluid is a stable colloidal dispersion of magnetic particles. This is due to delicate balance of attractive and repulsive forces between particles. In particular the interaction between magnetic moments in neighboring particles gives rise to magnetic forces and the surfactant molecules attached to their surface.

Ferro fluids show a change in their magnetic, thermo physical, mechanical, optical and acoustic properties in the presence of a magnetic field[5].

Ferrofluids contain single domain magnetic particles whose magnetic moments may align with an applied magnetic field by two distinct mechanisms- either bulk rotation of the particles with its magnetic moments locked in an easy direction of magnetization or rotation of the magnetic vector out of the easy direction. The later process is known as Neel rotation and has a relaxation time given[6].

$$\tau_n^{-1} = f_o \exp(-K V / K T) \quad (1)$$

44.	Dr. Dharmendra Rathod	

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AMELORATING POTENCY OF VITAMIN E ON HAEMATOLOGICAL PARAMETERS IN CADMIUM INDUCED TOXICITY IN LABORATORY CHICKS

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ABSTRACT

The present study was designed to check the ameliorating effect of vitamin E on haematological parameters in cadmium chloride induced toxicity in laboratory chicks (Gallus gallus domesticus). Developing chicks (100±20 gm body weight, 2-3 weeks old) were used as experimental animals. Chicks were randomly divided into three groups viz., A, B and C. Group A and B administered with cadmium chloride orally (5.0 mg/ 100 gm body weight) on each alternate day for 30 days. In addition to cadmium supplementation, group B also administered with vitamin E (0.5 IU/ 100 gm body weight) intramuscularly on each alternate day for 30 days. Chicks of Group C were considered as control and fed on basal diet and saline water only. Experiment was chronically continued for 30 days. After scheduled treatment chicks were sacrificed and blood collected through cardiac puncture for the experiments. Results showed significant reduction ($p < 0.05$) in blood parameters (RBC, WBC, Hb and PCV) were observed in chicks treated with cadmium chloride in group A. However, supplementation of vitamin E in cadmium chloride treated chicks (group B) resulted in marked improvements in haematological parameters. Present study indicate that vitamin E is a potent antioxidant that inhibit toxicity produced by cadmium chloride by chain breaking mechanism. The treatment of vitamin E normalized these haematological values up to the control level, signifying its protective effect in cadmium induced toxicity.

KEY WORDS

Cadmium chloride, Vitamin E, Haematological parameters, Anaemia, Chicks.

INTRODUCTION

Cadmium (Cd) can be considered the most toxic heavy metals [1]. Raised concentrations of Cd in soil may be found as a result of industrial activities (e.g. mining) or agricultural activities (e.g. sewage sludge, phosphate fertilizers, and pesticides) containing high concentrations of Cd [2]. Consumption of contaminated water is the major way by which humans are exposed to Cd [3] and the maximum allowable level in drinking-water is 0.005 mg/dL [4].

Animals can be exposed to Cd pollution by inhalation of polluted air, ingestion of polluted food and drinking of polluted water [5,2,6]. It is absorbed from gastrointestinal tract to blood, and cadmium is taken up from the blood into the tissues. The Cd accumulates in human and animals tissues, especially the liver and kidney, causing their damage [2]. Cd also causes reduced feed intake and weight loss, decreased RBC (red blood cell) and Hb (blood haemoglobin) values [7, 8] and anaemia in Cd exposed animals.

Cadmium induced injury to liver and kidney organs has been attributed to its ability to enhance free radical formation in vivo [9]. It also induces various pathological changes in liver tissues including engorgement of blood

45.	Dr. Dharmendra Rathod	

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AMELIORATING EFFECT OF VITAMIN E AND VITAMIN C ON CADMIUM INDUCED HEPATOTOXICITY IN LABORATORY CHICKS

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ABSTRACT

Cadmium is a well-known human carcinogen and a potent hepatotoxin induce severe liver damage by altering several marker enzymes. Vitamin E and Vitamin C are effective antioxidants and free radical scavenger against metal toxicity. Therefore, present study has been design to investigate the potential protective effect of vitamin E and vitamin C separately and in combined form against hepatotoxicity induced by cadmium chloride in laboratory chicks. Investigation was carried out by monitoring the AST, ALT and ALP level in liver. The level of AST, ALT and ALP increased significantly ($p<0.005$) in cadmium treated chicks as compared to control group, vitamin E and vitamin C treated groups. Present results reveals that intoxication of cadmium chloride ($CdCl_2$) induce hepatotoxicity and disturb the liver functions. When cadmium chloride treated chicks administered with vitamin E and vitamin C separately, the level of protection reach up to control level. On other hand, co- administration of both vitamins (Vit E + Vit. C) in combined form lead to the most significant protection against cadmium toxicity in comparison to vitamin E and vitamin C separately. In conclusion, results demonstrated that intoxication of cadmium chloride ($CdCl_2$) induce hepatotoxicity and co-administration of antioxidant i.e. vitamin E and vitamin C separately or in combined form leads to significant decrease in AST, ALT and ALP values in liver and exhibit improvement in liver functions. However, combined form of both vitamins was observed most protective.

Key words: $CdCl_2$, Vitamin E, Vitamin C, AST, ALT and ALP

1. INTRODUCTION

Cadmium (Cd) as a toxic heavy metal has been distributed widely and uniformly with small amount throughout the earth's crust. Cd is not considered as essential element for living organisms, therefore its presence in organism tissues is considered as contamination (Rehman et al., 2012). This element is known as one of the most important environmental and industrial toxic agents and affects many target tissues such as appetite and pain centers, brain, heart and blood vessel, kidney and lungs (Bendeddouche et al., 2014). In people occupationally exposed to Cd, main route of entry into the body is Cd inhalation, but also the intake of Cd via digestive tract and skin contributes total exposure (Velickov et al., 2013). It is a toxicant that has a long biological half-life (15-20 years) and accumulates over time within the blood, kidneys, and liver (Michael and Jorge, 2004). Cd causes poisoning in various tissues of humans and animals (Stosh et al., 2000).

Evidence suggests that Cd exposure enhances intracellular reactive oxygen species production and lipid peroxidation, which may led to tissue damage (Kara et al., 2005). Liver and kidneys are important organs of metabolism, detoxification, storage, and excretion of xenobiotics and their metabolites, and are especially vulnerable to damage (Brzoska et al., 2003). The greatest body accumulation of Cd occurs in the liver and kidney (Kang et al., 2016). Cd is toxic to several tissues, most notably causing hepatotoxicity as well as

46. Dr. Ashutosh Mishra

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रामचरितमानस में शैली वैज्ञानिक अध्ययन

डॉ० आशुतोष मिश्र
असिसटेंट प्रोफेसर (हिन्दी)
राजकीय महाविद्यालय मंगलौर
हरिद्वार, उत्तराखण्ड

हिन्दी साहित्याकाश के सूर्य कहे जाने वाले गोस्वामी तुलसीदास और उनके अद्वितीय महाकाव्य रामचरितमानस को है । रामचरितमानस को अनुपम सरोवर का रूप दिया गया है जिसमें अवगाहन या आचमन करने मात्र से घोर पापी भी सांसारिक दुखों से छुटकारा पाकर मोक्ष प्राप्त करते हुए ब्रह्मानंद स्वाद का आनंद लेता है ।

मध्यकालीन भक्ति काव्य के चिंतन, संप्रेषण एवं अभिव्यक्ति को सर्वोच्चता प्रदान करते हुए गोस्वामी तुलसीदास ने मानस की भाषा का विलक्षण आयोजन किया है जिसमें अवधी, ब्रज, अरबी, फारसी, तत्कालीन अन्य प्रांतीय तथा संस्कृत भाषाओं का अपूर्व कौशल प्रस्तुत किया है । समन्वय की विराट-चेष्टा उनके काव्य-सृजन का प्राण है ।

मानस भाषा में चयन को समझने से पहले चयन शब्द की व्युत्पत्ति एवं अर्थ को जानना आवश्यक है ।

'चयन' शब्द की व्युत्पत्ति एवं अर्थ देते हुए रामचंद्र वर्मा ने लिखा है :-

"चयन - पुं (सं.✓ चि + ल्युट् - अन्) (1) आवश्यकता रूचि आदि के अनुसार बहुत-सी वस्तुओं में से किसी एक को चुन या छांटकर अलग निकालने की क्रिया या भाव । जैसे - गुलदस्ते के लिए फूल अथवा संग्रहालय के लिए पुस्तकों का चयन करना । (2) इस प्रकार चुनी हुई वस्तुओं का समूह । संकलन (3) यज्ञ के लिए अग्नि का एक संस्कार ।" (1)

वामन शिवराम आप्टे 'चयन' शब्द की व्युत्पत्ति 'चयनम्' से मानते हुए 'अन' प्रत्यय को अस्वीकार है :-

"चयनम् (चि + ल्युट्) (1) चुनना, बीनना (फूल आदि का) । (2) ढेर लगाना, चट्टा लगाना।" (2)

चयन का अंग्रेजी पर्याय इसी अर्थ में प्रयुक्त होता है :-

"स्लेक्शन सं. (1) वरण; चयन ; चुनाव ; पसंद ; पसंदगी ; चुना हुआ ; (2) उन पशुओं और पौधों का चयन-कार्य जो विकासवाद के अनुसार रहने और बढ़ने के योग्य हैं प्रवरण/स्लेक्शन" । (3)

उपर्युक्त व्युत्पत्तियों एवं अर्थों से यह स्पष्ट हो जाता है कि 'चि' धातु चुनने के अर्थ में प्रयुक्त होती है जिसमें 'ल्युट् एवं अन् प्रत्यय लगाकर चयन शब्द की व्युत्पत्ति हुई है । चयन का अर्थ इच्छा या पसंदानुसार अनेक में से एक का वरण या ग्रहण करना । जैसे :- जल के लिए पानी, वारि, नीर, अंबु, पय, तोय आदि अनेक समानार्थी शब्द है । कवि अपनी इच्छा का उपयोगितानुसार इनमें से किसी एक शब्द का चयन करता है :-

'रहिमन पानी राखिए, बिन पानी सब सून ।
पानी गए न ऊबरे, मोती, मानुष, चून ।।'

47.	Prof (Dr) Jyoti Khare	

THINK INDIA JOURNAL

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Ai: A Prevalent Tool in Reshaping the Marketing

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Content Writer[2]

"Firms will address the pragmatic side of AI now that they have a better understanding of the challenges and embrace the idea that 'no pain means no AI gain.' The AI reality is here. Firms are starting to recognize what it is and isn't...and they are seeing the real challenges of AI versus what they assumed the challenges would be."— Michele Goetz, Principal Analyst, Forrester

ABSTRACT

The ability to connect with people all around the word who are using social media or reach out to customers across the globe, all this can be done with technology playing its best part. Creating a website for your business is the first major step you do. These websites become profitable only if they are constructed well, which directly will impact to good marketing of your business. Now, coming down to how can this become a good option in accelerating the marketing strategy. Artificial intelligence is the best way to use the present technology in a user-friendly way. Through this paper the researcher has explained the meaning of artificial intelligence and tried to bring out various ways in which this superb technology can be used to enhance the marketing tricks.

Keywords: Artificial Intelligence (AI), Marketing Strategy, Marketing, Showcasing.

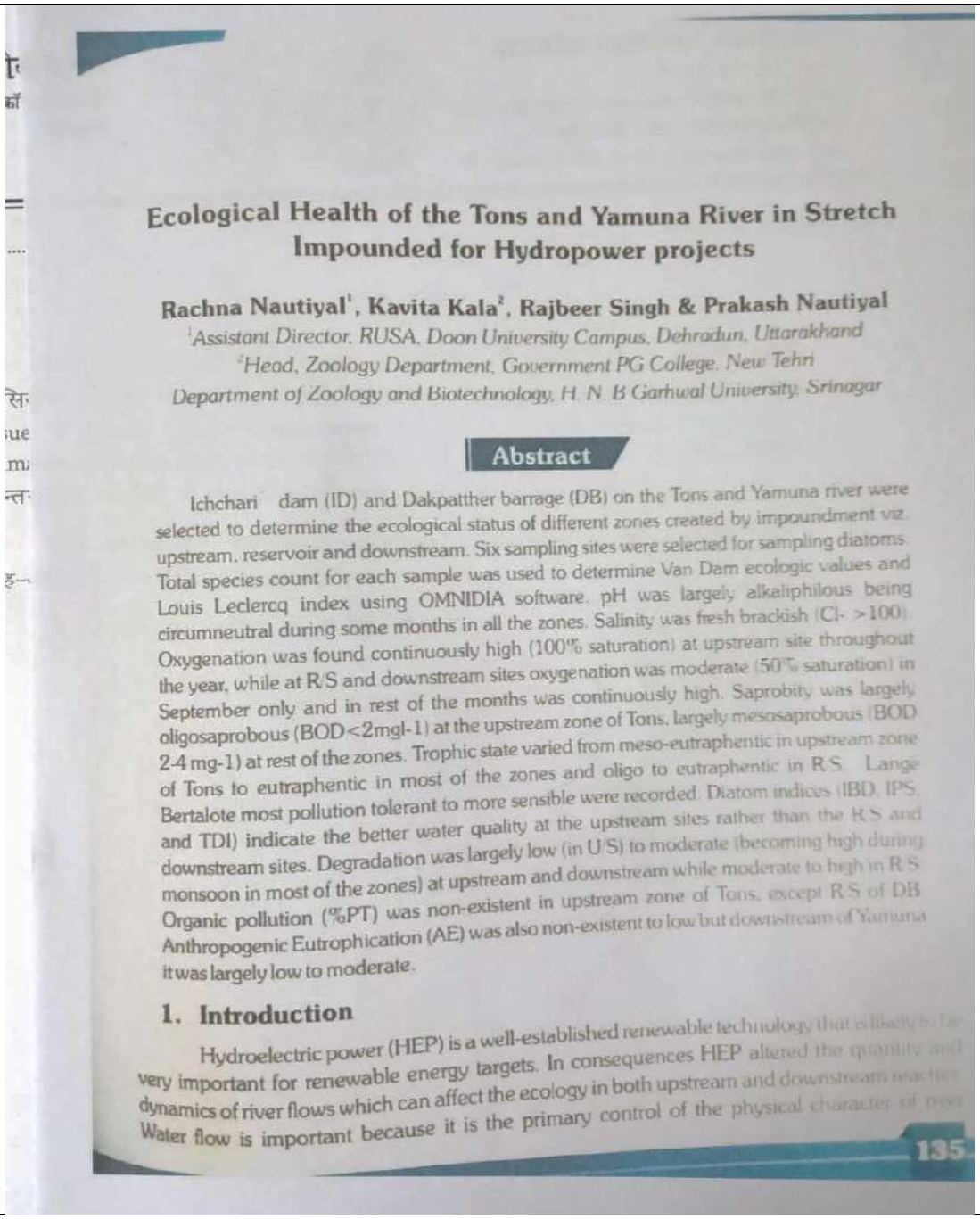
INTRODUCTION

Marketing can be considered as the combination of both qualitative and quantitative aspects. The major applications of AI in the field of marketing includes case-based reasoning, neutral networks expert system but in a practical manner. Like each area, showcasing has moreover been fundamentally impacted by the presentation of new advances and this impact will significantly develop in the upcoming years. It is obvious that AI has supported the execution of promoting in various manners. In close future, it is normal that AI will help the effect, for example Robots will be utilized as a substitute of sales reps, sites will be refreshed and reformatted naturally by eye-following information. Without a doubt, the exploration on showcasing will be moved and become unimportant as the new patterns in promoting will rise because of the AI.

A couple of years back, advertisers were fairly hesitant to join man-made consciousness (AI) in their advanced showcasing methodologies. In any case, this year they've increased significantly more trust in utilizing AI since its uncertainity has been diminished as for the outcomes it can give.

LITERATURE REVIEW

- As stated by Demis Hassabis, who is the founder of Deepmind – the AI Company of Google, "Artificial intelligence is the art to make machines intelligent (Ahmed, 2015)."
- According to GuruduthBanavar, supervisor of AI research by IBM, there are a broader variety of various types of Artificial intelligence, therefore, it can be considered as a collection of technologies (Kaput, 2016).
- The various vendor-provided solutions of AI also need customization for personal usage cases (Sterne, 2017).
- The structure was formed for simplifying and visualizing the ground and it is in line with the research carried out with different AI companies Impact of Artificial Intelligence in Marketing: A Perspective of Marketing Professionals of Pakistan © 2019 Global Journals I 28Global Journal of Management and Business Research Volume XIX Issue II Version I Year 2019 ( ) E and engineers on how marketing can take benefit from AI (Roetzer, 2017).

48.	Dr. Kavita Kala	

Ecological Health of the Tons and Yamuna River in Stretch Impounded for Hydropower projects

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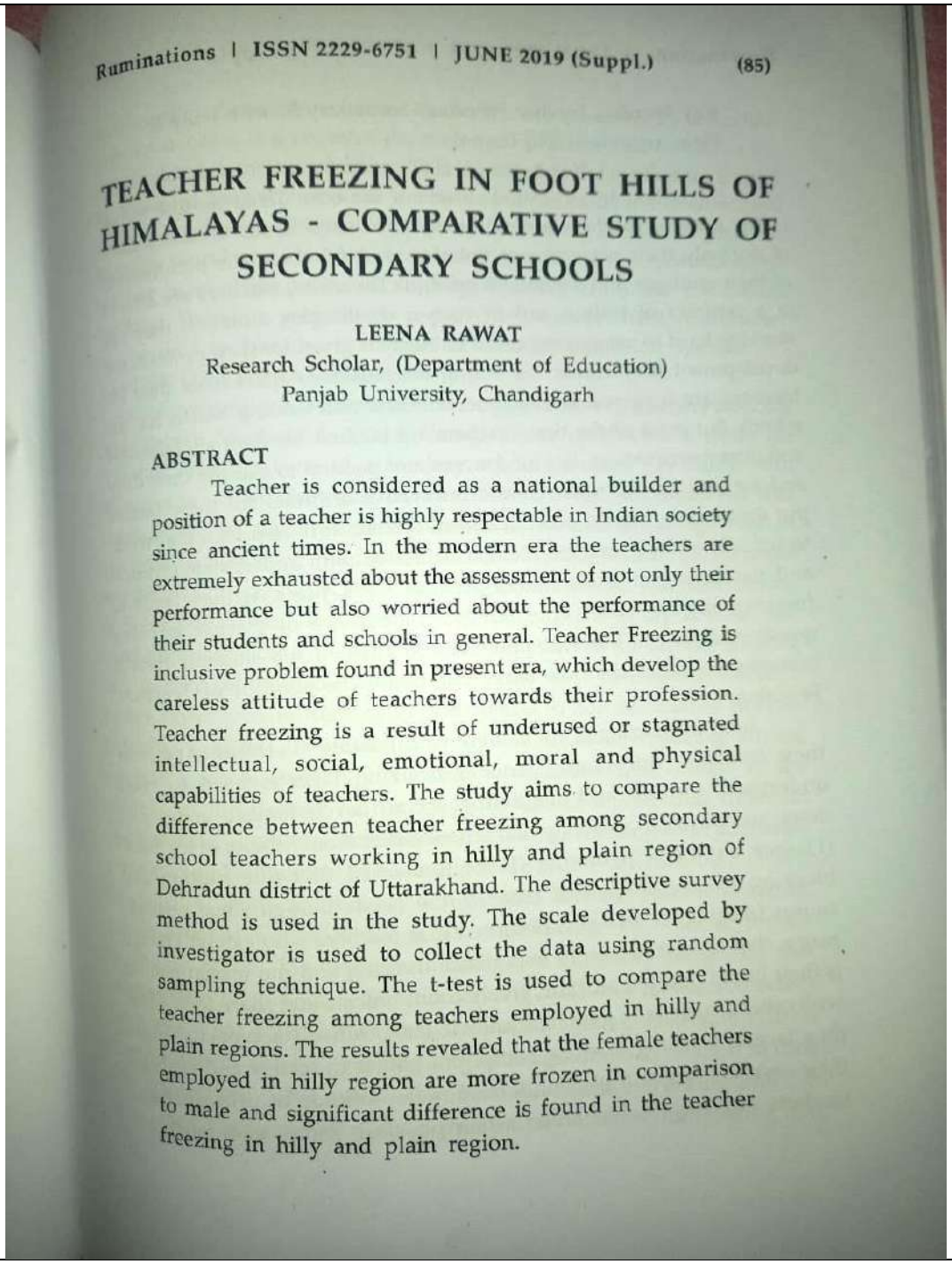
Department of Zoology and Biotechnology, H. N. B Garhwal University, Srinagar

Abstract

Ichchari dam (ID) and Dakpatther barrage (DB) on the Tons and Yamuna river were selected to determine the ecological status of different zones created by impoundment viz. upstream, reservoir and downstream. Six sampling sites were selected for sampling diatoms. Total species count for each sample was used to determine Van Dam ecologic values and Louis Leclercq index using OMNIDIA software. pH was largely alkaliphilous being circumneutral during some months in all the zones. Salinity was fresh brackish (Cl- >100). Oxygenation was found continuously high (100% saturation) at upstream site throughout the year, while at R/S and downstream sites oxygenation was moderate (50% saturation) in September only and in rest of the months was continuously high. Saprobity was largely oligosaprobous (BOD<2mgl-1) at the upstream zone of Tons, largely mesosaprobous (BOD 2-4 mg-1) at rest of the zones. Trophic state varied from meso-eutraphentic in upstream zone of Tons to eutraphentic in most of the zones and oligo to eutraphentic in R/S. Large Bertalote most pollution tolerant to more sensible were recorded. Diatom indices (IBD, IPS, and TDI) indicate the better water quality at the upstream sites rather than the R/S and downstream sites. Degradation was largely low (in U/S) to moderate (becoming high during monsoon in most of the zones) at upstream and downstream while moderate to high in R/S. Organic pollution (%PT) was non-existent in upstream zone of Tons, except R/S of DB. Anthropogenic Eutrophication (AE) was also non-existent to low but downstream of Yamuna it was largely low to moderate.

1. Introduction

Hydroelectric power (HEP) is a well-established renewable technology that is likely to be very important for renewable energy targets. In consequences HEP altered the quantity and dynamics of river flows which can affect the ecology in both upstream and downstream reaches. Water flow is important because it is the primary control of the physical character of river

49.	Dr. Leena Rawat	

TEACHER FREEZING IN FOOT HILLS OF HIMALAYAS - COMPARATIVE STUDY OF SECONDARY SCHOOLS

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ABSTRACT

Teacher is considered as a national builder and position of a teacher is highly respectable in Indian society since ancient times. In the modern era the teachers are extremely exhausted about the assessment of not only their performance but also worried about the performance of their students and schools in general. Teacher Freezing is inclusive problem found in present era, which develop the careless attitude of teachers towards their profession. Teacher freezing is a result of underused or stagnated intellectual, social, emotional, moral and physical capabilities of teachers. The study aims to compare the difference between teacher freezing among secondary school teachers working in hilly and plain region of Dehradun district of Uttarakhand. The descriptive survey method is used in the study. The scale developed by investigator is used to collect the data using random sampling technique. The t-test is used to compare the teacher freezing among teachers employed in hilly and plain regions. The results revealed that the female teachers employed in hilly region are more frozen in comparison to male and significant difference is found in the teacher freezing in hilly and plain region.

50.	Prof (Dr) Pooja Kukreti	

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NATURE-BASED SOLUTIONS FOR LANDSLIDE RISK MANAGEMENT IN UTTARAKHAND

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Abstract - The Himalayan region of India is situated in one of the most geo-tectonically active and ecologically sensitive zones of the world. Landslides are one of the most important types of natural hazards during monsoon in this mountainous region. Indian Himalayan state of Uttarakhand because of its geography and topography is particularly vulnerable to climate induced disasters. These affect adversely both human and animal lives, cause enormous damage to properties, and blocks communication within and outside the region and lead to an additional financial burden on the state and national economy. Climate change, deforestation, damming of rivers (hydel projects) and other tourism driven unplanned constructions along the towns and riverbeds has caused massive flooding and landslides with large scale destruction over past few decades. Landslide occurs in high frequency especially along the hill cut roads. It is thus imperative to initiate effective and innovative landslide risk reduction and management plans in the state. Landslide risk reduction involves a series of activities that include landslide susceptibility mapping, risk evaluation, landslide monitoring, forecast etc. There has been an increasing interest in non-structural and Nature-based Solutions (NbS) in many countries including India. NbS has emerged as a sustainable and efficient approach for rehabilitating degraded ecosystems and reducing climate and disaster risks. Extensive research and the successes of the many applications, has now established that NbS can be effectively used to replace or complement the conventional engineering measures for landslide risk management.

Keywords: Climate Change, Himalayan ecosystem, Landslides, Nature-based Solutions, Risk Management

1 INTRODUCTION

Different countries experience different disasters because of their geographical location as well as topographical features. The developing countries are more vulnerable to disasters than developed countries as more developmental pressure exists in the developing countries. Further, the mountain habitats of these countries share similar bio-climatic features and are prone to natural hazards of landslides, earthquakes, avalanches and diseases etc. and also manmade disasters that have devastating impacts causing death and destruction.

India is one of the ten most disaster prone countries of the world. In India, most of its landmass is affected by disasters like earthquakes (58.6%), floods (12%) and landslides (15%) which are due to number of factors– adverse geo-climatic conditions, topographic features, environmental degradation, urbanisation and non-scientific development. With close to 11,000 deaths due to landslides in 12 years, India tops a global list of nearly 56,000 deaths from 4,800 landslides around the world between 2004 and 2016. India not only accounts for 20% of global landslide deaths but also has the dubious distinction witnessing the fastest rise in human-triggered fatal landslides in the world (Deccan Herald, 2018).

1.1 Indian Himalayan State of Uttarakhand

Uttarakhand has attained its place among the first five states in reverence of natural hazards. Uttarakhand's geography and topography makes it particularly vulnerable to climate-induced disasters. The state is predisposed to earthquakes, landslides, flash-floods, cloud-bursts, avalanches as well as drought. These disasters have taken heavy tolls on life, property, livelihoods and have caused severe damage to environment and ecology. According to the state records of Disaster Management and Mitigation Centre (DMMC) there have been 20 landslides in the state over 11 years from 2001 to 2012. The disaster of 16-17 June, 2013 was a grim reminder of colossal devastation in terms of large number of casualties and widespread damage to the houses, property, roads, bridges, buildings, forests, plantation, crops and agriculture land. The devastation caused by the disaster was so huge that it has been termed as Himalayan Tsunami.

51.	Prof (Dr) Pooja Kukreti	

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PEER REVIEWED AND REFEREED JOURNAL

WATER MANAGEMENT - NEED OF AN URGENT ACTION PLAN FOR UTTARAKHAND

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Abstract:- The 27th State of the Indian Republic - Uttarakhand, is surrounded by the mighty Himalayas and the topography is characterized by a rugged mountainous terrain, deep valleys and sharp river flows. Over 80% of the State lies under hills and the most important rivers Ganga and Yamuna originate in this region. These rivers feed vital fresh water and hydroelectric power to some of the most populated states of India but these invaluable resources are fast depleting, intensified by human activities like deforestation, urbanization, mining, damming, cash crop cultivation etc, with adverse effect on the sensitive regional climo-balance. As a result the State is experiencing severe water crisis and the worst impact is in the rural, remote mountain regions which are rain dependent and where ground water recharge is more vulnerable. Several Government led initiatives and programs have so far failed to make the desired effect but with detailed strategies developed along with the local communities, using local knowledge and modern technologies such as GIS and Remote Sensing, better water management is possible. The study evaluates the current situation of the water resources and points out the most prominent challenges while making recommendations to intensify water conservation, rain water harvesting and water use efficiency through recycling and reuse.

Keywords:- Water scarcity, rain water harvesting, water use efficiency, conservation.

INTRODUCTION

The State of Uttarakhand, nestled in the lap of the mighty Himalayas, is endowed with natural water resources mainly from the snow fed glaciers. The region, also known as *Devbhoomi* or the "Land of the Gods" is not only home to the countless ancient Hindu temples, of utmost mythological relevance, but is also the place where the holy rivers, the Ganga and the Yamuna, originate.

These rivers which represent sanctity and purity, the pride of the Hill State and worshipped by over a billion Hindus are now making news headlines as among the most polluted in the world and have become a threat to the millions of inhabitants along their banks. These life giving and life sustaining glacial rivers themselves are under grave threat as, over the last decades, they have turned into seasonal streams, polluted with untreated sewage, industrial wastes and agricultural runoffs, intercepted by massive diversion of flows, and encroached upon, leaving a sluggish flow in places during the lean months (Das, 2011).

Further, the unprecedented rise in temperatures, erratic rainfall and changes in weather conditions are affecting the distribution of snowmelt, river flows and groundwater reserves across the entire Himalayan region endangering not only the sensitive biodiversity but also resulting in severe fresh water crisis in the State of Uttarakhand. The situation gets more severe for those in rural and remote regions of the State as the mountain springs are the main source of water for drinking and other household purposes and for the habitat of the highlands and lowlands (Agarwal *et al.*, 2012).

52.	Prof (Dr) Pooja Kukreti	

The Way Forward for Eco-tourism in the Uttarakhand Economy

Pooja Kukreti

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Department of Botany

Pt. L.M.S. Government Post Graduate College, Rishikesh, Uttarakhand

Abstract

The 27th State of the Indian Republic - Uttarakhand, is surrounded by the mighty Himalayas, shares international borders with Nepal and Tibet, and has a forest cover of over 70%. Her historical and mythological importance, along with its unique topography offers abundant natural resources, rich biodiversity and innumerable options to be explored by tourists, both domestic and foreign, with a wide range of interests. No doubt then that the tourism industry is one of the principal drivers of the state economy, which is among the fastest growing in the country. However, the growth of the tourism sector has been unplanned and largely unregulated, not allowing the local communities to reap the full benefits of its potential. Through eco-tourism there is an opportunity to not only realize the socio-economic goals but build environmental and cultural awareness, while preserving the diverse and sensitive ecology. The recent government initiatives in the form of *Tourism Policy 2018* and *Uttarakhand Vision 2030* lay out the strategy and the vision to accomplish this objective. However, strict regulations and control in the quality of services and facilities, implementation of environmental measures such as emission and pollution standards, minimization of energy costs, appropriate measures for solid waste disposal, treatment of sewage and above all inclusion of the local communities in the initiatives will pave the way for success and prosperity.

Keywords: Eco-tourism, economy, tourism, environment, ecology, biodiversity, forest

Introduction

The State of Uttarakhand, nestled in the lap of the mighty Himalayas, is abundant in natural beauty and wildlife. The region, also known as *Devbhoomi* or the "Land of the Gods" is not only home to the countless ancient Hindu temples, of utmost mythological relevance, but is also the place where the holy rivers, the Ganga and the Yamuna, originate. According to the Hindu legend it is believed that the Kauravas and Pandavas were trained by the revered Guru Dronacharya in this region, the reason why Dehradun, the capital city of Uttarakhand, is also known as Drona Nagri.

This rich and inspiring centuries old history not only makes the region the most sacred of all pilgrimage destinations but the enchanting topography ranging from foothills to the higher snow clad mountains, the rivers, the lakes, the waterfalls, the formidable trek routes, and the wildlife parks makes it one of the most enthralling tourist destination which attracts millions of people from across the world each year.

The State is home to world known biosphere reserve - the Nanda Devi Biosphere Reserve and Asan Wetland Conservation, besides national parks and heritage sites like Jim Corbett Tiger National Park, Gangotri National Park and Valley of Flowers. Over the last two decades, it has attracted many national and foreign tourists for adventure tourism in the form of water sports, trekking, skiing, paragliding, camping, angling, mountaineering and rock-climbing and more recently, has emerged as an important attraction for spiritual, yoga, wellness, heritage, culture, and eco-tourism.

53.	Prof (Dr) Pooja Kukreti	

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REVISITING THE 2013 FLASH FLOODS IN UTTARAKHAND – CRITICAL LESSONS LEARNT IN DISASTER MANAGEMENT

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Pt. L.M.S. Government Post Graduate (Autonomous) College, Rishikesh, Uttarakhand

ABSTRACT

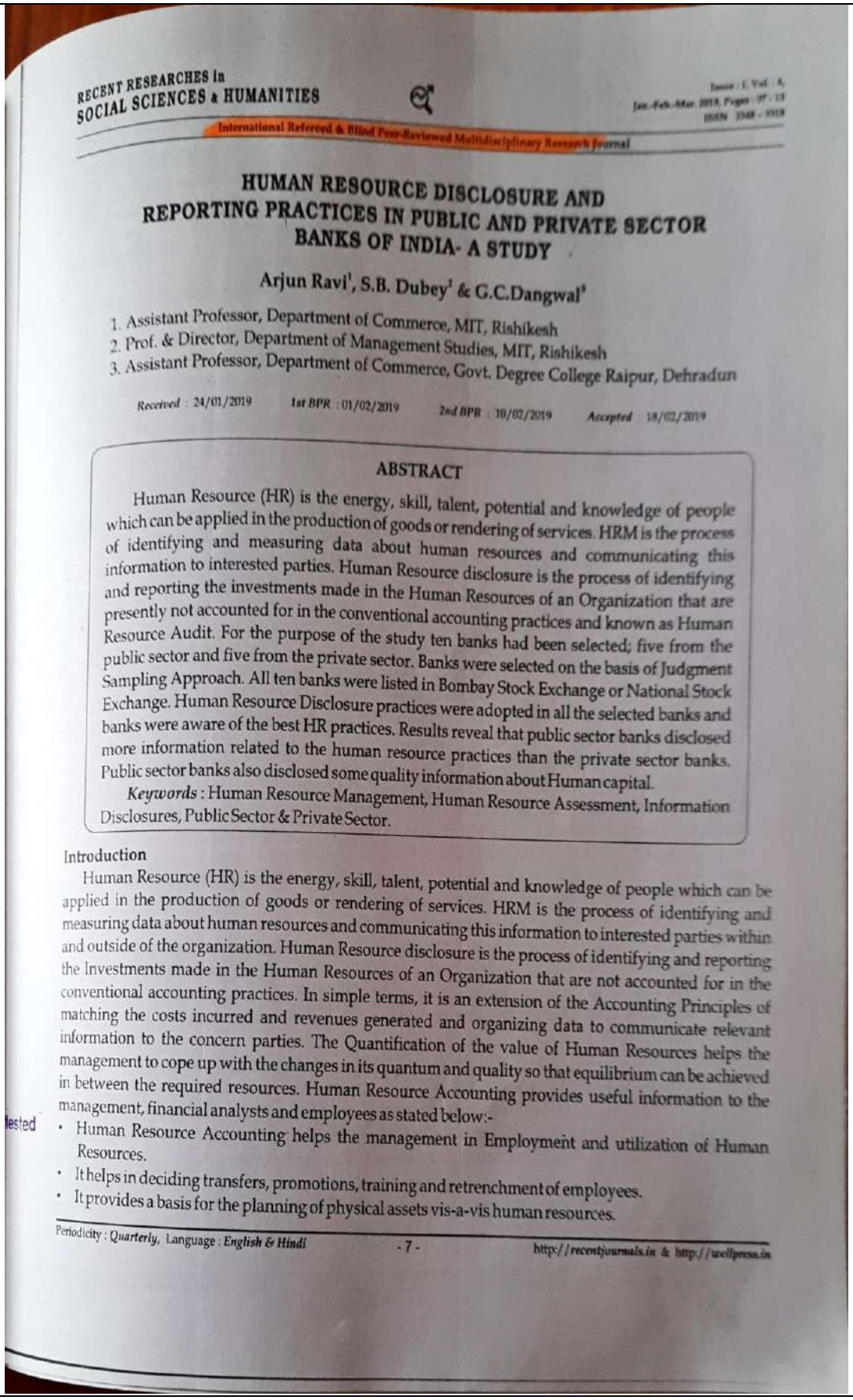
Unprecedented rainfall due to a cloud burst led to a devastating disaster in the hill region of Uttarakhand in June 2013 in which thousands of lives were lost with immeasurable damage to property and environment. The hilly terrain and lack of disaster response plan led to further chaos as governmental and non-governmental bodies struggled to carry out search and rescue. Thousands remained stranded and died of hunger and injuries as they waited for rescue to arrive. The aftermath of the incident was blame from one side to the other but little concrete steps have been taken since to improve the disaster management in the State. Although a flood of this scale is rare, it is believed that with climate change a tragedy of this magnitude will happen again in the near future unless we acknowledge that the underlying risks are not unlikely events but rather the probable events which led to the Kedarnath tragedy. Through a committed and organized effort, disaster management can be improved and such tragedies averted.

Key Words: *Disaster management, disaster response, disaster preparedness, floods, landslides.*

INTRODUCTION

A devastating disaster struck the Indian state of Uttarakhand on 16-17 June 2013, when a cloud burst resulted in unprecedented rainfall causing melting of Chorabari Glacier and bursting of adjoining *Gandhi Sarovar* at a height of 3800 meters. Consequent overflow of river Mandakini led to heavy floods in Kedar valley in Rudraprayag district. Heavy to very heavy rains continued in the area causing floods and landslides. A number of villages and settlements were badly affected. Township of Ram Bada, a transition point to Kedarnath, was completely obliterated, while Gaurikund and the market town of Sonprayag suffered severe damage and loss of lives. Towns like Kalimath, Ukhimath, Agustyamuni and Tilwara down the stream suffered heavy losses of lives and property (Dobhal *et al.*, 2013; DMMC, 2013; Kala, 2014).

As a result of the above mentioned disaster, more than 6,000 people were reported missing (believed to be dead) and more than a hundred thousand were stranded for days. In addition, the disaster caused widespread losses of public utilities such as bridges, roads, schools and other government buildings, and drinking water schemes (World Bank, 2013). The disaster also left stranded over 70,000 tourists and 0.1 million local inhabitants in the upper reaches of mountain terrain of Uttarakhand. The biggest ever rescue operation in the history of disaster management has been undertaken by Government of Uttarakhand with the

54.	Prof (Dr) G.C Dangwal	

RECENT RESEARCHES in
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International Refereed & Blind Peer-Reviewed Multidisciplinary Research Journal

HUMAN RESOURCE DISCLOSURE AND REPORTING PRACTICES IN PUBLIC AND PRIVATE SECTOR BANKS OF INDIA- A STUDY

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ABSTRACT

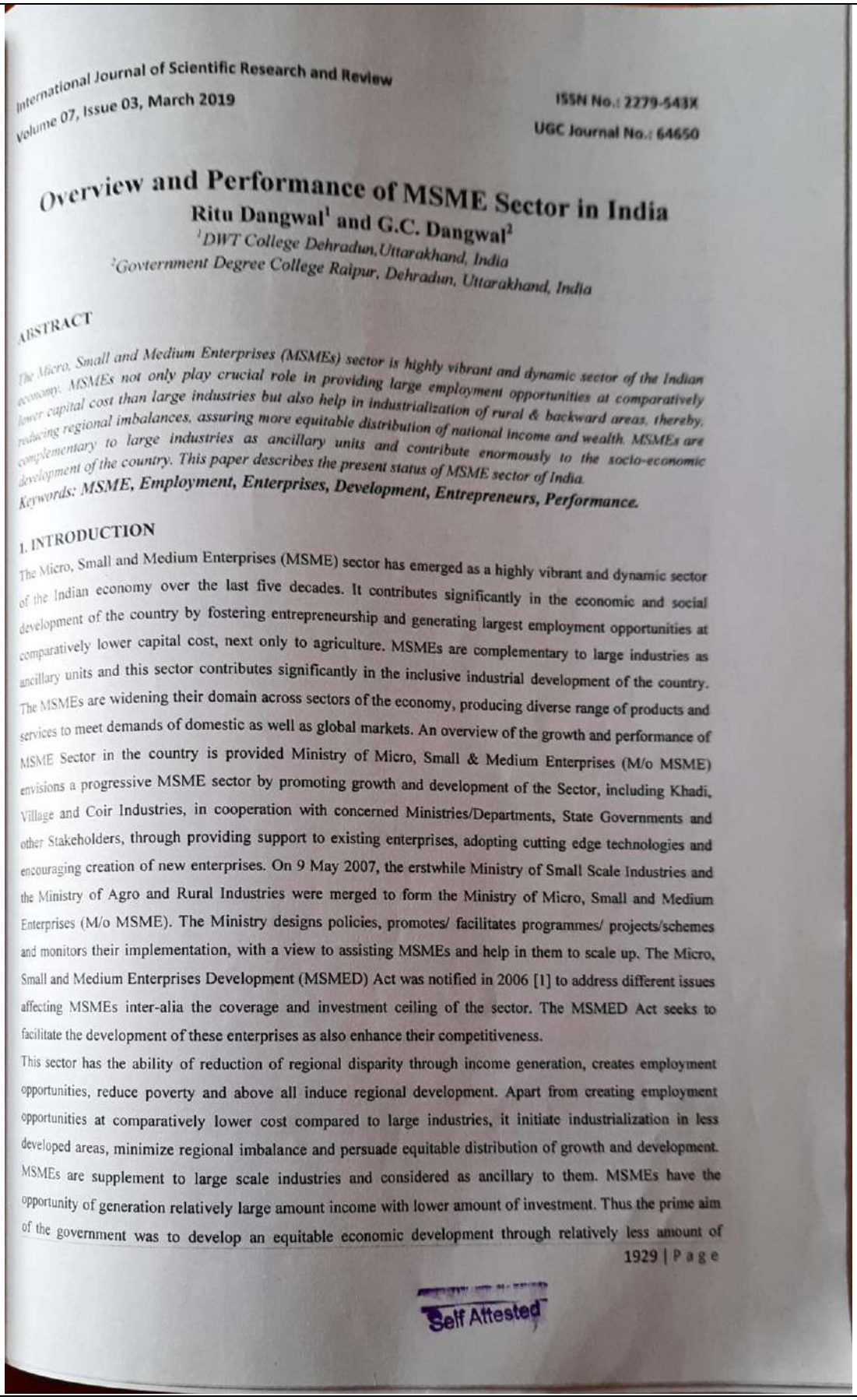
Human Resource (HR) is the energy, skill, talent, potential and knowledge of people which can be applied in the production of goods or rendering of services. HRM is the process of identifying and measuring data about human resources and communicating this information to interested parties. Human Resource disclosure is the process of identifying and reporting the investments made in the Human Resources of an Organization that are presently not accounted for in the conventional accounting practices and known as Human Resource Audit. For the purpose of the study ten banks had been selected; five from the public sector and five from the private sector. Banks were selected on the basis of Judgment Sampling Approach. All ten banks were listed in Bombay Stock Exchange or National Stock Exchange. Human Resource Disclosure practices were adopted in all the selected banks and banks were aware of the best HR practices. Results reveal that public sector banks disclosed more information related to the human resource practices than the private sector banks. Public sector banks also disclosed some quality information about Human capital.

Keywords : Human Resource Management, Human Resource Assessment, Information Disclosures, Public Sector & Private Sector.

Introduction

Human Resource (HR) is the energy, skill, talent, potential and knowledge of people which can be applied in the production of goods or rendering of services. HRM is the process of identifying and measuring data about human resources and communicating this information to interested parties within and outside of the organization. Human Resource disclosure is the process of identifying and reporting the Investments made in the Human Resources of an Organization that are not accounted for in the conventional accounting practices. In simple terms, it is an extension of the Accounting Principles of matching the costs incurred and revenues generated and organizing data to communicate relevant information to the concern parties. The Quantification of the value of Human Resources helps the management to cope up with the changes in its quantum and quality so that equilibrium can be achieved in between the required resources. Human Resource Accounting provides useful information to the management, financial analysts and employees as stated below:-

- Human Resource Accounting helps the management in Employment and utilization of Human Resources.
- It helps in deciding transfers, promotions, training and retrenchment of employees.
- It provides a basis for the planning of physical assets vis-a-vis human resources.

55.	Prof (Dr) G.C Dangwal	

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Overview and Performance of MSME Sector in India

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ABSTRACT

The Micro, Small and Medium Enterprises (MSMEs) sector is highly vibrant and dynamic sector of the Indian economy. MSMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and contribute enormously to the socio-economic development of the country. This paper describes the present status of MSME sector of India.

Keywords: MSME, Employment, Enterprises, Development, Entrepreneurs, Performance.

1. INTRODUCTION

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly in the economic and social development of the country by fostering entrepreneurship and generating largest employment opportunities at comparatively lower capital cost, next only to agriculture. MSMEs are complementary to large industries as ancillary units and this sector contributes significantly in the inclusive industrial development of the country. The MSMEs are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic as well as global markets. An overview of the growth and performance of MSME Sector in the country is provided Ministry of Micro, Small & Medium Enterprises (M/o MSME) envisions a progressive MSME sector by promoting growth and development of the Sector, including Khadi, Village and Coir Industries, in cooperation with concerned Ministries/Departments, State Governments and other Stakeholders, through providing support to existing enterprises, adopting cutting edge technologies and encouraging creation of new enterprises. On 9 May 2007, the erstwhile Ministry of Small Scale Industries and the Ministry of Agro and Rural Industries were merged to form the Ministry of Micro, Small and Medium Enterprises (M/o MSME). The Ministry designs policies, promotes/ facilitates programmes/ projects/schemes and monitors their implementation, with a view to assisting MSMEs and help in them to scale up. The Micro, Small and Medium Enterprises Development (MSMED) Act was notified in 2006 [1] to address different issues affecting MSMEs inter-alia the coverage and investment ceiling of the sector. The MSMED Act seeks to facilitate the development of these enterprises as also enhance their competitiveness.

This sector has the ability of reduction of regional disparity through income generation, creates employment opportunities, reduce poverty and above all induce regional development. Apart from creating employment opportunities at comparatively lower cost compared to large industries, it initiate industrialization in less developed areas, minimize regional imbalance and persuade equitable distribution of growth and development. MSMEs are supplement to large scale industries and considered as ancillary to them. MSMEs have the opportunity of generation relatively large amount income with lower amount of investment. Thus the prime aim of the government was to develop an equitable economic development through relatively less amount of

Self Attested

56.	Prof (Dr) G.C Dangwal	

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MSMEs in India - Problems and Prospects

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ABSTRACT

The MSME sector is playing a key role in socio-economic development of India by providing a tool for inclusive and sustainable development. MSME sector has a great role for developing economy like India. MSME sector positively contribute in equitable regional development, employment growth, industrial growth and overall economic development.As per the National Sample Survey (NSS) 73rd round conducted during the period 2015-16, MSME sector creates 11.10 crore jobs in rural and urban sector of India. Inspite of having so much importance for the socio-economic development of India, this sector is facing some problems. This paper tries to find out the problems and prospects of this sector in India.

Keywords: ***MSME, Development, Employment, Entrepreneurs, Performance.***

I. INTRODUCTION

MSME sector has a lot of potential to grow but it is facing some hindrances. Micro, Small and Medium Enterprises (MSMEs) provide an opportunity to low income group for participating in inclusive Socio-economic development of economy. As per the Sixth Economic Census (2013), 58.5 million establishments were found to be in operation. 34.8 million Establishments (59.48%) were found in rural areas and nearly 23.7 million establishments (40.52%) were found to be located in urban areas. MSME sector is increasing employment opportunities, industrial output, exports and technological upgradation. The products of MSME sector are selling in International markets also. Contribution of this sector in total GDP was nearly 5.94 percent and 38.57 percent in Industrial production in 2006-07.

In India MSMEs are classified on the basis of investment in plant and machinery as per the MSMEs development act, 2006. MSMEs are defined as Micro, Small and Medium enterprises. This classification can be described as follows:

Manufacturing Sector	
Enterprise Category	Investment in plant & machinery
Micro Enterprises	Does not exceed twenty five lakh rupees
Small Enterprises	More than twenty five lakh rupees but does not exceed fivecrore rupees
Medium	More than five crore rupees but does not exceed ten crore rupees
Service Sector	
Enterprise Category	Investment in equipments
Micro Enterprises	Does not exceed ten lakh rupees;
Small Enterprises	More than ten lakh rupees but does not exceed two crore rupees

Self Attested

57.	Prof (Dr) G.C Dangwal	

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ROLE OF CUSTOMER RELATIONSHIP MANAGEMENT IN BUSINESS

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Faculty of Commerce, Government Degree College Raipur, Dehradun, Uttarakhand

Abstract- In the present era of intense globalization, it is very crucial for any business to retain customers in order to survive in this competitive world. Customer relationship management is a process or methodology used to learn more about the needs and behavior of customers so as to develop stronger relations with them. There are many technological terms related to customer relationship management, but it not good to think of it primarily in such terms. In fact, to think about customer relationship management as a process that helps in bringing together lots of information about customers, sales, marketing effectiveness, responsiveness and market trends. This paper attempts to assess the role of customer relationship management in business from the same point of view and to suggest ways accordingly to make it fruitful for the growth of business organizations.

Keywords- Customer Relationship Management, Business growth, Customer support services, Market trends.

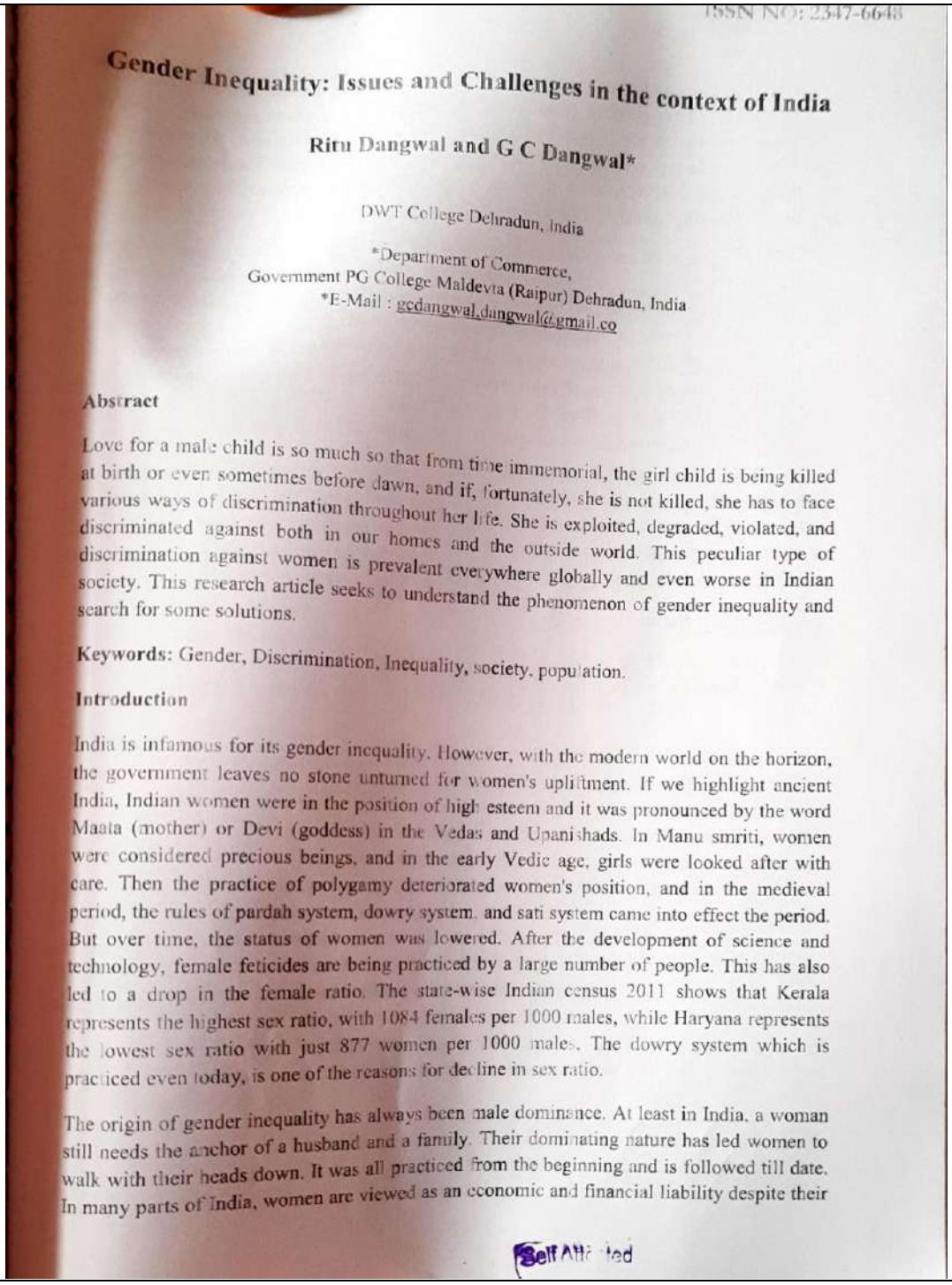
INTRODUCTION

The term Customer Relationship Management refers to the practices, strategies, and technologies that companies used to manage and analyze customer interactions and data throughout the 'customer lifecycle', with the goal of improving customer service relationships, and assisting in customer retention and driving sales growth.

Customer Relationship Management is a strategy widely used by companies and organizations (including related integrated information systems and technology, often in the form of software) to record and manage their overall data and interactions with current, past and potential customers. CRM works to ensure that all customer interfacing organizational functions like sales, marketing, technical support are efficient and synchronized, ensuring that customer and potential customers are adequately and appropriately served.

CRM is concerned with the creation, development and enhancement of individualized customer relationships and with carefully targeted customers and customer groups resulting in maximizing their total customer life time values". It is a system of managing a company's interactions with current and future customers. It often involves using technology to organize, automate and synchronize sales, marketing, customer service and technical support.

Self Attested

58.	Prof (Dr) G.C Dangwal	

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Gender Inequality: Issues and Challenges in the context of India

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Abstract

Love for a male child is so much so that from time immemorial, the girl child is being killed at birth or even sometimes before dawn, and if, fortunately, she is not killed, she has to face various ways of discrimination throughout her life. She is exploited, degraded, violated, and discriminated against both in our homes and the outside world. This peculiar type of discrimination against women is prevalent everywhere globally and even worse in Indian society. This research article seeks to understand the phenomenon of gender inequality and search for some solutions.

Keywords: Gender, Discrimination, Inequality, society, population.

Introduction

India is infamous for its gender inequality. However, with the modern world on the horizon, the government leaves no stone unturned for women's upliftment. If we highlight ancient India, Indian women were in the position of high esteem and it was pronounced by the word Maata (mother) or Devi (goddess) in the Vedas and Upanishads. In Manu smriti, women were considered precious beings, and in the early Vedic age, girls were looked after with care. Then the practice of polygamy deteriorated women's position, and in the medieval period, the rules of pardah system, dowry system, and sati system came into effect the period. But over time, the status of women was lowered. After the development of science and technology, female feticides are being practiced by a large number of people. This has also led to a drop in the female ratio. The state-wise Indian census 2011 shows that Kerala represents the highest sex ratio, with 1084 females per 1000 males, while Haryana represents the lowest sex ratio with just 877 women per 1000 males. The dowry system which is practiced even today, is one of the reasons for decline in sex ratio.

The origin of gender inequality has always been male dominance. At least in India, a woman still needs the anchor of a husband and a family. Their dominating nature has led women to walk with their heads down. It was all practiced from the beginning and is followed till date. In many parts of India, women are viewed as an economic and financial liability despite their

59.	Prof (Dr) Vijendra Lingwal	

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Temperature Dependence of Dielectric Conductivity in $KTa_xNb_{1-x}O_3$ System for $x \leq 0.5$

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Abstract

Pellet samples of mixed potassium tantalate niobate ($KTa_xNb_{1-x}O_3$), for compositions x = 0, 0.1, 0.2, 0.3, 0.4 and 0.5 were prepared by solid-state reaction method. The calcined mixture was pressed at 0.2 GPa and sintered in a closed furnace to form 8 mm diameter pellets. Temperature variation of dielectric conductivity of the prepared samples has been studied in the frequency range from 0.1 KHz to 1 MHz. Dielectric conductivity has been observed increasing with increasing frequency and with increasing x values, for $x \leq 0.4$; for x = 0.5, conductivity decreases at 0.1, 1 and 10 KHz. At 100 and 1000 KHz conductivity decreases for x = 0.3, showing the MPT region. Anomalies have been observed near the transition temperatures of the samples in temperature-dielectric conductivity curves.

Keywords: *Conductivity, ferroelectrics, morphotropic region, perovskite, phase transition.*

I. INTRODUCTION

Potassium tantalate niobate, $KTa_xNb_{1-x}O_3$ (KTN), has received a great deal of attention as a ferroelectric material possessing the perovskite structure [1]. Because of its piezoelectric, pyroelectric, and electro- optic properties, the material is of interest for application in band filters, infrared detectors, and electro-optic modulators [1-2]. KTN has been proved a promising material which can compete with another well known ferroelectric material $Ba_{1-x}Sr_xTiO_3$ [3-5]. The Curie temperature and ferroelectric properties of KTN are composition dependent and can be varied by controlling the Ta : Nb ratio.

Dielectric measurements were first reported by Matthias et. al. [6] and Vousden [7] on the end members of KTN system, i.e., in $KNbO_3$ and $KTaO_3$ single crystals, and observed two transitions, at 224 and 434 °C, for $KNbO_3$, at 10 KHz. $KTaO_3$ remains in paraelectric phase up to very low temperature. Afterwards several investigators studied this system [8-28]. However, most of the studies were restricted to single crystal, and optical properties of the system. To make the material more applicable in different areas, studies should be carried out over a wide frequency and temperature range, and with varying composition. Temperature and frequency (from 0.1 KHz to 1 MHz) dependence of dielectric conductivity, of KTN system, for different x values have been investigated, in the present study.

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60.	Prof (Dr) Savita Verma	
61.	Dr. Manju Kogiyal	

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CONTACT CONFORMAL CONNECTION IN A TRANS –SASAKIAN MANIFOLD

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RECEIVED : 23 July, 2019

Oubina, J.A. [1] defined and initiated the study of Trans-Sasakian manifolds. Blair [2], Prasad and Ojha [3], Hasan Shahid [4] and some other authors have studied different properties of C-R-Sub –manifolds of Trans-Sasakian manifolds. Golab, S. [5] studied the properties of semi-symmetric and Quarter symmetric connections in Riemannian manifold. Yano, K. [6] has defined contact conformal connection and studied some of its properties in a Sasakian manifold. Mishra and Pandey [7] have studied the properties in Quarter symmetric metric F-connections in an almost Grayan manifold.

Result : In this paper we have defined and studied the contact conformal connection in a Trans-Sasakian manifold. Following the patterns of Yano [6], we have proved that if the curvature tensor of a contact conformal connection in an (α , 0) type Trans-Sasakian manifold vanishes, then the contact Bochner curvature tensor also vanishes.

Key words: Riemannian curvature tensor, Trans-Sasakian manifold, C-R-Sub –manifolds of Trans-Sasakian manifolds, semi-symmetric and Quarter symmetric connections in Riemannian manifold, almost Grayan manifold, contact Bochner curvature tensor.

SELF ATTESTED

INTRODUCTION

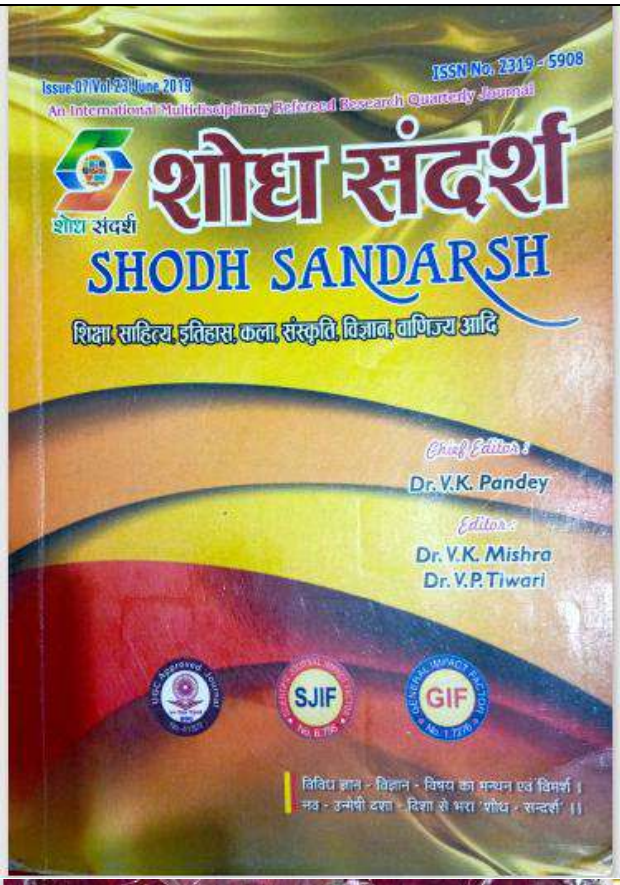
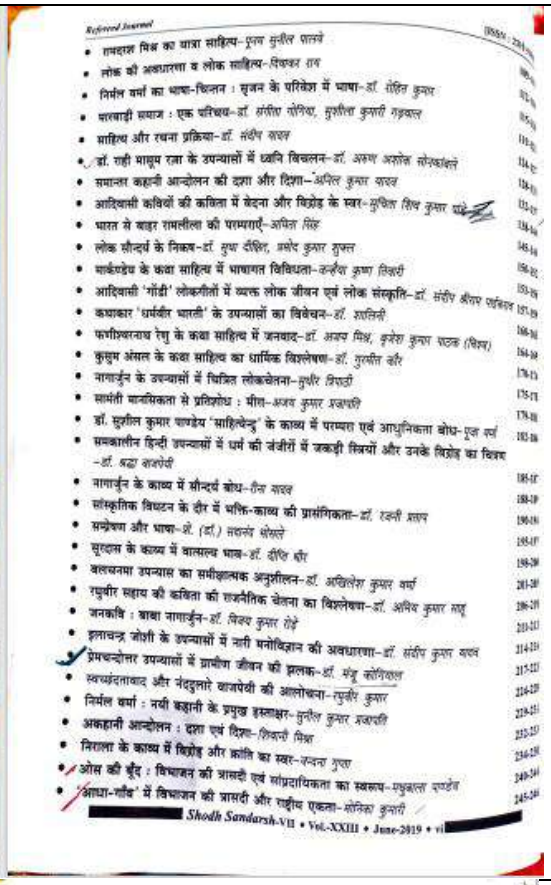
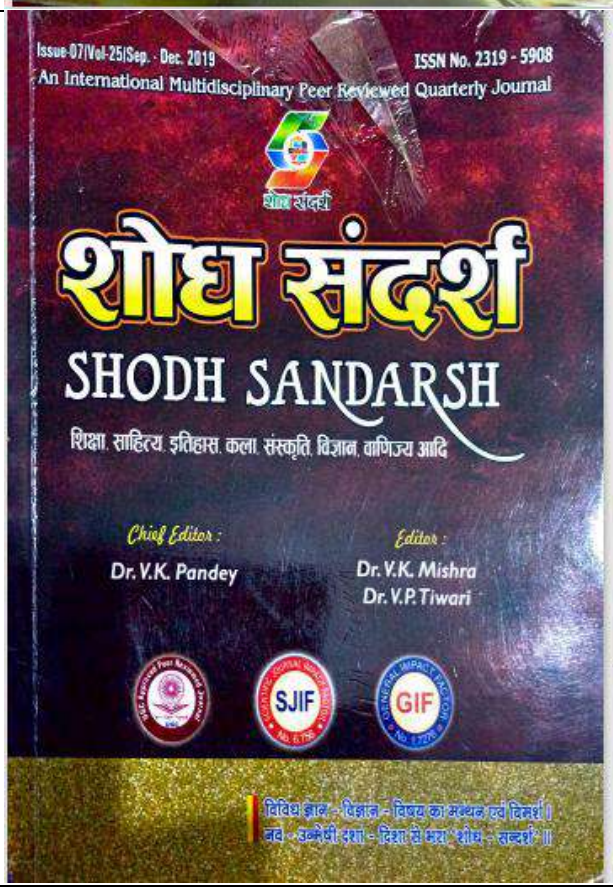
Let M_n $(n = 2m + 1)$ be an almost contact metric manifold endowed with a (1,1)-type structure tensor F, a contravariant vector field T, a –1 form A associated with T and a metric tensor 'g' satisfying :

$$F^2X = -X + A(X)T \quad ...(1.1a)$$

$$FT = 0 \quad ...(1.1b)$$

$$A(FX) = 0 \quad ...(1.1c)$$

$$A(T) = 1 \quad ...(1.1d)$$

62.	Dr. Manju Kogiyal	 
63.	Dr. Manju Kogiyal	 

64.	Prof (Dr) Madhu Thapliyal	

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12 Gr

Decoding Evolution of Native Fishes in Garhwal Himalaya using Molecular Markers and DNA Barcoding

Madhu Thapliyal, Bipin Sati, Ashish Thapliyal, K. K. Joshi

Abstract: *As we are moving forward into the modern era of science, several new technologies have revolutionized various branches of science. Techniques of biodiversity conservation, fish biology etc. has also adapted to modern techniques. For a long time, most of the researches in taxonomy, including fisheries science were based on morphology and traditional methods. After the decade of 90's, slowly severalmolecular markers like RFLP, RAPD, SNP's etc. made inroad into taxonomy and fisheries. Molecular markers have several applications in the field of livestock improvement and understanding population dynamics to name a few. Since the 2004, a specific molecular marker, generally known as DNA Bar-coding for species identification, came up. This molecular marker is a part of mitochondrial genome that encodes for Cytochrome C Oxidase Unit I (also called as COX or COI). It is advantageous because it has been tested across several animal species and it can differentiate species very well. This marker has also been used as a forensic tool to identify the species. In the current paper, we have used this molecular marker to decode evolution of native fishes of Garhwal Himalayan region. Over 350 barcodes were developed and these barcodes were used to for phylogenetic analysis.*

Key words- *Molecular Markers, DNA Bar-coding, Evolution, Himalaya, Breeding, livestock*

I. INTRODUCTION

Himalaya has diverse and extensive network of fresh water rivers, streams, lakes etc. All these fresh water bodies harbor diverse aquatic fauna with fishes being the most extensively studied. There are many fish species reported by many authors in Uttarakhand. It is suggested that the native fish species of Himalayan region might be one of the earliest inhabitant of these fresh water systems and hence they are a good model to study evolution unfolding. These fishes have been well documented. However, prior to the year 2000, most of the studies were based on morphological characters and books like "Day Fauna" were served as the "KEY" for identification of fishes. All these so called "KEYS" were extensive illustrations of each species. About 2500 species of fishes have been reported in India and approximately 930 of these are fresh water fishes. The Himalayan region of India harbor's about 225 of these fresh water fishes. Various researchers have reported up to 50 different fish species from Garhwal Himalayan region.

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In Uttarakhand, most of the fresh water fishery resources are contributed by the River Yamuna or River Ganges. Fishes of Rivers Ganges (and is tributaries) has been well documented by fishes of River Yamuna in Garhwal Himalaya have not been well known except some contributions. There are numerous morphological based studies but there are only few report investigating fish species using molecular markers. Molecular markers are also being used used for assessing biodiversity using environmental DNA and meta-genomics (Krehenwinkel et. al., 2019; Adams et. al., 2019; Xing et. al. 2020). In about last three decades, the scenario of most of the Himalayan region as changed due to fast changing ecology of upland waters. Impact of anthropogenic activity on genome of fish species is among the interest in Himalayan region. The genetic variation in Himalayan region due to the regular floods in rivers and Dam constructions still not reported. Attempts have also been made to generate the DNA barcode & Population genetics of fishes, but most of the attempts are limited to major rivers i.e. the Ganges and the Yamuna (Thapliyal et al., 2013).

The molecular markers based on DNA are helpful to provide evolutionary relationship among different populations and cryptic species identification. The current paper is an attempt to investigate these changes using molecular markers specially focusing on DNA barcoding.

II. WHY MOLECULAR MARKERS

During several studies on morphological characters, research encountered a dilemma. There were several individuals which looked alike or had only small variations. A good example is that of *Schizothorax* species. It needs an expert to identify (ID) the two species of *Schizothorax* namely *S. progastus* and *S. richardsonii* and even after identification there could be queries about the ID. This happens in several species that they look alike but they are actually different species genetically. The latest example is of Giraffe (Petzold&Hassanin, 2020). To solve this issue, molecular markers emerged and as they are specific sequences of DNA, these studies when coupled with morphometric studies were considered better option for species level identification. Introduction of molecular biology techniques in fisheries had a huge impact on the entire fishery research. Through application of these techniques we can figure out the variations in specific regions of genome. We can also develop a marker for desired characters and identify species based on DNA Barcode which is somewhat similar or just like a product barcode.

Self attested

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65.	Prof (Dr) Madhu Thapliyal	

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Adaptive skill of *Schizothorax sp.* of river Alaknanda under long term pressure of urbanization and anthropogenic activities in Garhwal Himalaya

Thapliyal M.[1], Bahuguna S. N.[2] and Thapliyal A. [3]

Received: 29.12.2018 **Revised: 08.04.2019** **Accepted: 21.05.2019**

Abstract

It is universally accepted that humans are having a major impact on every aspect of earth's ecological habitats because humans are engaged in urbanization and anthropogenic activity. All the major watershed areas of Garhwal Himalayan region (Alaknanda, Bhagarathi/Ganges and Yamuna) have witnessed urbanization and anthropogenic activity. One hydroelectric power project (330 MW) is located on river Alaknanda at Srinagar Garhwal in Garhwal Himalaya. The project started during the mid1990s by GVK group and completed around 2014. A long term study on fecundity of *Schizothorax sp.* at Srinagar Garhwal was carried out between the years 1996 to 1998. This study was compared to other recent studies on same species at same location between the years 2016-19. This period covers the entire timeline of construction phase to commissioning phase of this hydroelectric power project. Various parameters with reference to breeding biology and fecundity were measured from *Schizothorax sp.* Mature specimens ranging in average weight from 384g to 1482g and average length from 320mm to 544mm were observed. Weight of ovary in the fish fluctuated from 38g to 219g. Fecundity of samples varied from a minimum to 3009 to a maximum of 13649 to 13840. The mathematical relationship of fecundity with other variables viz: fish length, fish weight, ovary weight and ovary length, and between fish weight and ovary weight and ovary length was calculated. The computed relationships were found to be highly significant especially between fecundity and fish length ($r=0.940$, $p<0.01$), fecundity and fish weight ($r=0.937$, $p<0.01$) and fecundity and ovary volume ($r=0.913$, $p>0.01$). The values of regression coefficient (b) and correlation coefficient (r) were computed separately. The data when compared to recent data of other authors reveals that *Schizothorax sp.* have sustained their fecundity due to their unique adaptive skill but have shifted their breeding grounds slightly. This shifting of breeding ground might be due to anthropogenic activity. Further studies would be needed to see if the breeding grounds are also restored.

Key words: *Fecundity, Gonadosomatic Index, Schizothorax, Sringar Garhwal, Garhwal Himalaya, Hydroelectric Power project*

Introduction

There are three main watersheds in Garhwal Himalayan region of Uttarakhand of India. These are the Alaknanda, Bhagirathi (Ganges) and the Yamuna watershed. Due to their perennial water supply, and keeping in view the tremendous energy demand due to increasing population, several hydroelectric power projects have been either constructed or are under construction in these watersheds. Because of these constructions, the aquatic habitat and aquatic diversity is threatened.

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Fishes are most abundant species in river and directly connected to us in the form of food (economics) and aesthetic value. Besides they are also the key indicators of ecosystem as they live in specialized niches. Since they are among the key components of biodiversity and indicators of habitat, the study of their reproduction biology and fecundity is important. If the habitat for the fish species is perfect, they will reproduce at specific spawning grounds and if there are issue with the habitat, then they will preferably migrate to suitable grounds. Besides spawning grounds the number of eggs produced by female fish is also a key parameter which is also referred as fecundity. There are several studies documenting fishes in Alaknanda river and Bhagarathi since the 1970s and 80s (Agarwal *et al.*, 1988; Agarwal and Singh, 2009; Bisht and Joshi, 1975; Singh and Sharma

Self attested

66.	Prof (Dr) Madhu Thapliyal	

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12-I

Impact of Hydropower Project on Physico -chemical Parameters and Phytoplanktons Diversity in Bhagirathi River, District Uttarkashi

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Abstract

This paper present to study of variation of Physico- chemical parameters and phytoplanktons diversity before the dam (site 1) and after the dam (site 2) of Maneri Bhali Phase II on Bhagirathi river of district Uttarakashi. The estimation of Physico–chemical parameters were done as water temp, DO, pH, ,BOD, CO_2, Hardness and Turbidity by standard methods (Trivedi R..K. and Goel .P.K (1986), APHA (1995), in the study of the Maneri Bhali Phase II. The DO was found greater in S_1 as compared to S_2 . CO_2 was found slightly greater S_2 as compared S_1 The assessment of phytoplanktons diversity was done by plankton nets at each site. The quantity of phytoplanktons was also counted by Sedgwick rafter. Result showed that plankton abundance in the before and after the dam sites varied. The change water quality and flora diversity and density after the dam could be explained by large fluctuation in the water level brought about by drastic change in flow regime of water after dam. It suggested that the critical level of water should be maintained after the dams wall as result the water quality and flora will be sustained.

Key words: Physico–chemical parameter, Phytoplankton diversity, Dams wall, Critical level of water.

Introduction

Uttarakhand is a northern part of India, which is famous for holy rivers. Two main rivers are originated in Uttarkashi district .ie. Bhagirathi and yamuna. A number of hydro-electric projects in Uttarkashi district are constructed in Bhagirathi river which causes to change the water levels dramatically as a result water quality parameters and phytoplanktons are affected. Therefore the present study was carried out to assess the impact of dams on diversity of phytoplanktons and physico- chemical parameter of before and after the dam of Maneri Bhali Phase II. The construction of dam in the riverine system changes the biological and ecological conditions of rivers. Alteration occurs in the floral and faunal characteristics near the dammed site (Ogbeibu and Oribhabor, 2002). The developments like construction of dams and barrages along the river results in low water flow (Hassan et al., 1998a, 1998b). It has been widely observed that physical chemical factor such as stream substrate dissolve oxygen and water temperature be affected by impoundment (cumin 1979; Stanford and ward 1979; ward and Stanford 1979; waters 1995 ;Hayes 1998) Dissolved oxygen occur when deep release dams draw water from the anoxic hypolimnion (Ward and Stanford 1987). Dam also change river water turbidity which may also affect population of biota diversity (Berkamp G. et al 2000).the plankton population observed may be used biomonitoring studies to assessment the pollution status of aquatic bodies (Mathivanan V.et al. 1995). The productivity of any aquatic water body depends on the amount of plankton present in the said water body (Guy. 1992). Planktons organism may be used as indication of water quality (Saha et.al. 2000).

Materials and methods-:

Study area.

Our study area was Maneri Bhali Phase II in Joshiyara Uttarkashi. Its latitude,longitude and altitude are 30°42'36" N ,78° 24'7" E and 919 m. Water from this reservoirs is diverted through a tunnel (29 km distance) to a hydroelectric power house at Dharasu. This power house generates 304 MW of electricity and was commissioned in 2008.

Self attested

67.	Prof (Dr) Madhu Thapliyal	

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Research Article

WATER QUALITY STATUS AND FISH POPULATIONS OF BHAGIRATHI RIVER IN UTTARKASHI, UTTARAKHAND

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Key Words:
Water quality parameters,, Ecological diversity,, Proper Management, Conservation of fish habitat

ABSTRACT

The present research paper was projected study water quality status and fish population of Bhagirathi river of Uttarkashi, Uttrakhand. Bhagirathi is the important tributary of holy river Ganga of India, originated from Gomukh Glacier. People of Uttrakashi are facing many problems the scarcity of drinking water, irrigation, generation of electricity in rainy season. In order to make a decision the water quality parameters measurement, use of its for public, recreation, river ecology, fish diversity etc. The parameters like pH, conductivity, and turbidity TDS, DO, BOD, total alkalinity, total hardness, were determined. Higher TDS values were recorded in all sampling site in winter and lower in summer. DO was observed maximum in winter and minimum in June to September. BOD was observed high in monsoon and low in winter. It was concluded that good water quality condition in winter, while at summer and rainy season showed poor water quality. The results give good advice that urgent need to for proper water management in rainy season and the suitable tools to restore the water quality of this river for a healthy and promising human society and river ecology for conservation of fish habitat, fishery development etc.

INTRODUCTION

Uttarakhand state is hilly state in the north part of India. It has a diverse geographical condition on the basis of social, economical and environmental conditions. The state is divided into thirteen districts. One of district is Uttarkashi. It is remote area district of Uttarakhand state of India. Two important holy rivers are originated in Uttarkashi District. i.e. Bhagirathi and Yamuna. Bhagirathi river is originated from Gangotri glaciers and flow through the Uttarkashi district headquarter. In the rainy seasons drinking water and its quality are deteriorated due to heavy rain fall and cloud bursting. In 2013 cloud bursting and land slide occurred along the main and tributaries of Bhagirathi river, which causes the erosion, occurred in the agricultural field and some part of road system. Moreover, Water is not only necessary for survival of human beings, but also for animals, plants and all other living beings (Razo *et al*., 2004). Nowadays a big problems are facing due to remarkable growth of populations and change of land uses urban region developments. It is due to migration of people from remote or hilly area to plane. Water is used for animals and crops production can also be mutual with the public and the aquatic and terrestrial ecosystems (Cooper *et al*., 1998). Water resources are of big environmental issue. It was studied by a wide range of specialists including hydrologists, ecologists, geologists and geomorphologists engineers. (Kumar and Dua,2009). Changes in the water condition are due to the combination of natural and human action factors like inputs from agriculture and release of sediments from erosion and urban and industrial runoff (Huang *et al*., 2014). Major risk to the domestic use of water is through microbial contamination (Joshua *et al*., 2015; Matta, 2014).

Bhagirathi River has rich aquatic diversity. One of the most common endemic fish species that inhabit this fresh water is the *Schizothorax* species. Many local people of uttarkashi depend upon the fish occupation. They catch the fishes by different techniques and sell the fishes to the market for their live hood. But in the rainy season, their occupation is being stop . The study aims to provide detailed information on seasonal variation of Physico-Chemical parameters and native fish *population*. These species prefer fast running torrential cold water rivers and are found at the bottom under stones and rocks and are usually found above an altitude of 670 meters in

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Self attested

68.	Prof (Dr) Anita Tomar	

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STRICT COINCIDENCE AND STRICT COMMON FIXED POINT VIA STRONGLY TANGENTIAL PROPERTY WITH AN APPLICATION

ANITA TOMAR, SAID BELOUL, SHIVANGI UPADHYAY AND RITU SHARMA

ABSTRACT. In this paper, we prove two strict coincidence and strict common fixed point theorems for weakly compatible hybrid pairs of strongly tangential mappings satisfying F-contraction, in a metric space. An example and an application to functional equations arising in dynamic programming is given to illustrate our results. In the sequel several known results are extended, generalized and improved.

1. INTRODUCTION

The contraction principle due to Banach has been generalized in different directions and one of such generalizations is due to Nadler [13], where he used the Hausdorff metric to prove existence of a fixed point of multivalued mapping in metric space. Later many authors established some results in non linear analysis concerning the multivalued / hybrid fixed point theory and its applications using two types of distances. One is the Hausdorff distance and another is the $\delta-$ distance. Although $\delta-$ distance is not a metric like the Hausdorff distance, but shares most of the properties of a metric. In this paper we utilize a Ćirić type F-contraction and Hardy-Rogers type F-contraction inequality introduced by Minak et al. [12] (independently by Wardowski and Dung [23] as F-weak contraction) and Cosentino and Vetro [7] respectively, using $\delta-$ distance to establish the existence of a strict coincidence and strict common fixed point of a weakly compatible hybrid pair of mappings which are strongly tangential. However it is worth mentioning here that idea of F-contraction was initiated by Wardowski [22] which has again been generalized by several authors in different directions. In the last section, an application to functional equation arising in dynamic programming is given to demonstrate applicability of results obtained. We also present some remarks to show that our results provide extensions as well as substantial generalizations and improvements of several well known results existing in literature.

2010 *Mathematics Subject Classification.* 47H10, 25H54.
Key words and phrases. Strict common fixed point, strongly tangential property, weakly compatible, hybrid pair.
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69.	Prof (Dr) Anita Tomar	

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EXISTENCE OF COMMON FIXED POINT IN SYMMETRIC SPACE WITH APPLICATION

ANITA TOMAR, SHIVANGI UPADHYAY AND RITU SHARMA

ABSTRACT. Motivated by the fact that most of the times techniques used to establish coincidence and common fixed point do not require triangle inequality of the distance function, an attempt has been made in this paper to obtain coincidence and common fixed point theorems for S and T-compatible of type (E) and S and T-sub-sequentially continuous pairs of self-mappings in a symmetric space. Examples are given to illustrate our results and an application is also furnished to demonstrate the applicability of results obtained.

1. INTRODUCTION

M. Fréchet [4] axiomatically framed the idea of distance at the beginning of nineteen century although its knowledge is as old as the history of civilization. Actually, appreciating the Euclidean distance between two points given by the absolute difference, Fréchet expressed and generalized the notion of distance in an abstract form. It is an imperative fact that the origination of the notion of metric unlocks a novel era to mathematical analysis and consequently the interconnected disciplines. Recently, the notion of F-contraction has fascinated the attentiveness of numerous researchers and by now there exists a substantial literature related to this notion. For instance: Minak et al. [5], Tomar et al. [11]-[12], Tomar and Ritu [14], Wardowski [15], Wardowski et al. [16] and many others. Aim of this paper is to establish some common fixed-point theorems for mappings satisfying Ćirić type F-contraction in symmetric (semi-metric) space using S and T-compatibility of type (E) and S and T-sub-sequential continuity. Motivation behind is the fact that most of the times techniques used to establish coincidence and common fixed point do not require triangle inequality of the distance function. Further this appears to be of fundamental significance in view of a traditionally noteworthy open question raised by Rhoades [7] whether or not there is a contractive condition which is convincing to establish a fixed point, but does not force the mapping to be continuous at the fixed point. In this paper, we postulate one more affirmative solution to an open question of Rhoades [[8], page 242] in a symmetric space. It may be witnessed

2010 *Mathematics Subject Classification.* 47H10, 54H25.
Key words and phrases. Common fixed point, weakly sub-sequentially continuous, compatible type(E), Ćirić type F-contraction, Symmetric space.
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70.	Dr. Dharmendra Rathod	

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ANTI-HYPERGLYCEMIC ACTIVITY OF *AJUGA BRACTEOSA* LEAVES IN ALLOXAN INDUCED DIABETIC CHICKS

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ABSTRACT

Present study was carried out to investigate a local medicinal plant, *Ajuga bracteosa* for its anti-hyperglycemic activity in alloxan induced diabetic chicks. A total of eighteen domestic chicks (Gallus gallus domesticus) of either sex were divided into three groups (A, B and C) of six animals each. For the induction of diabetes in group A and group B, chicks were administered with alloxan (120 mg/kg i.p.) for one week. After the confirmation of diabetes, done by glucose test kit, Group A chicks were considered as diabetic control, Group B chicks as diabetic chicks treated with *Ajuga bracteosa* leaves extract (100 mg/kg, orally, 30 days daily) and Group C chicks as normal control. On different intervals of days (1st, 10th, 20th and 30th), blood samples were taken from the wing's vein and glucose level was evaluated. Data were analyzed by using one-way analysis of variance, $p<0.05$ was considered statistically significant. The Group B diabetic chicks treated with the extract of *Ajuga bracteosa* leaves showed significant ($p<0.05$) reduction in blood glucose level as compared to Group A diabetic control chicks. The result obtained in the study indicates the potent anti-hyperglycemic activity of the *Ajuga bracteosa* leaves extract in alloxan-induced diabetic chicks.

KEYWORDS: Anti-hyperglycemic, alloxan, *Ajuga bracteosa*, Diabetes

1. Introduction

Diabetes mellitus (DM) is a group of metabolic disorder characterized by hyperglycemia. DM occurs due to defects in insulin secretion, insulin action or both.[1] The presence of DM confers increased the risk of many devastating complications. It is considered as one of the five leading cause of death in the world.[2] Insulin and various types of hypoglycemic agents such as biguanides and sulfonylureas are available for the treatment of diabetes. However, none of these medications is ideal due to toxic side effects and in some cases domination of response after prolong use.[3] The main disadvantages of the currently available drugs are that they have to be given throughout the life and produces side effects in many cases.

Therefore, Inspite of availability of many oral hypoglycemic agents for the treatment of diabetes, in the last few years, use of herbal medicines for diabetes has been increased greatly and these drugs are gaining popularity both in developed and developing countries because of their natural origin and less side effects.[4] Although several medicinal plants have gained importance for the treatment of DM and many remain to be scientifically investigated.[5] Therefore, plant materials are continuously scrutinized and explored for their effect as anti-hyperglycemic agents.

Ajuga bracteosa is an important medicinal plant of Himalaya region. It is a praised medicinal, aromatic, herbous, soft and decumbent herb which is about 10–30 cm in height.[6] It is found on grassland, exposed slopes and open field in temperate and subtropical region of the world [7] at an elevation of 1300m to 2400 m. [8] *Ajuga bracteosa* is known from different vernacular names. It is commonly called "Bungle" in English, "Nilkanthi" in Sanskrit and 'Ratpatiya' in Hindi.

71.	Dr. Dharmendra Rathod	

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Research Article

Protective Effect of Vitamin E on Haematological Parameters in Chronic Toxicity of Hexavalent Chromium in Laboratory Chicks

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ABSTRACT

Analysis of blood parameters is relevant to risk evaluation of alternations of the haematological system in humans and animals. Haematological parameters have been associated with health indices and are of diagnostic significance in routine clinical evaluation of the state of health of any individual. Present study was carried out to ascertain the antioxidant properties of vitamin E on haematological parameters caused by hexavalent chromium - Cr(VI) in laboratory chicks. Developing chicks (Croiler, body weight 100±20 gm) were used as experimental animals. Blood samples were collected from wing veins of chicks and analyzed after experiment. The haematological profile revealed a significant ($p<0.05$) reduction of Total Red Blood Cell count (RBC), total White Blood Cell count (WBC), Haemoglobin concentration (Hb), Packed cell volume (PCV) and Mean corpuscular hemoglobin concentration (MCHC) in toxin group compared to control group. However, the group of chicks treated with chromium and vitamin E alternatively, recorded significant increase in all these blood parameters indicating the protection offered by vitamin E as an ameliorating antioxidant against chromium toxicity.

Keywords: Haematological parameters, hexavalent chromium [Cr(VI)], vitamin E, antioxidant.

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INTRODUCTION

Chromium is one of the major environmental toxicants that affect human health. It is one among the eight most common pollutant heavy metals listed by the Environmental Protection Agency[1]. It is a naturally occurring element found in rocks, volcanic dust and gasses, soils as well as plants and animals. This transition metal can exist in various oxidized forms ranging from −2 to +6. The three main oxidation forms of chromium, commonly found in the workplace and general environment, are chromium (0), chromium (III), and chromium (VI). Chromium (0) is the metal chromium, a steel-gray solid with a high melting point usually used for making steel and other alloys. Chromium (III) and chromium (VI) compounds are widely used industrially in stainless steel production, welding, electroplating, leather tanning, production of dyes and pigments, and wood preservatives[2,3].

It is well known that oral intake along with food and water is the major route of exposure to chromium for the general population. It has been reported that the chromium (VI) form appears to be 10-100 times more toxic than the chromium (III) form when both are administered by the oral route[4]. It is established from that chronic diseases affect the blood cells adversely. Exposure to chromium, the transition element found in many compounds of earth's crust, leads to various health hazards including cancer, dermatitis, damage of liver and kidneys, and alternations in haematological parameters. Toxic effect of chronic exposure to chromium at low environmentally relevant dose is recently recognized and less studied.

Chromium (VI) can easily enter the cell than chromium (III) through SO_4^{2-} and PO_4^{2-} channels. After entering the cell, chromium (VI) undergoes a chain reaction with production of chromium intermediates such as chromium (V) and chromium (IV) by cellular reductants such as ascorbic acid and riboflavin, glutathione, and serum protein[5]. The reduced product binds to intracellular proteins, resulting in an elevation of total chromium in the blood cell for several weeks. During this reduction process, chromium produces reactive oxygen species and generates oxidative stress. This in turn is responsible for defective haematopoiesis[6].

It has been reported that chromium (VI) is considered as a toxic transition heavy metal and a potent industrial hazard that causes severe damage to a variety of tissues and organs including the reproductive system[7-10]. Most of the studies on

72.	Dr. Dharmendra Rathod	

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Research Paper

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Antiapoptotic Effect of *Ajuga bracteosa* Leaves on Hepatic Dysfunction in Alloxan Induced Diabetic Chicks

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Abstract:- The present study was carried out to assess the antiapoptotic effect of *Ajuga bracteosa* leaves on the hepatic dysfunction in alloxan induced diabetic chicks. Hydroalcoholic extract of *Ajuga bracteosa* leaves was prepared by standard method as prescribed earlier and apply for monitoring the liver enzymes including Alkaline phosphatase (ALP), Aspartate amino transferase (AST - SGOT) and Alanine amino transferase (ALT - SGPT) in experimental chicks, including diabetic control and diabetic treated with the hydroalcoholic extract of *Ajuga bracteosa* leaves at the rate of 100gm/Kg body weight and normal control chicks fed with water *ad libitum*. Present study reveals a significant ($p<0.05$) decline in the level of these enzymes in the chicks treated with hydroalcoholic extract of *Ajuga bracteosa* leaves up to the control level as compared to chicks of diabetic control group. Therefore, administration of hydroalcoholic extract of *Ajuga bracteosa* leaves in diabetic chicks significantly ameliorate the enzymological parameters for the assessment of hepatic dysfunction in diabetic chicks, which showed the potent antiapoptotic effect of *Ajuga bracteosa* leaves extract on hepatic dysfunction in alloxan induced diabetic chicks.

Keywords: Antiapoptotic, *Ajuga bracteosa*, Hepatic, Alloxan, Diabetes, ALP, AST - SGOT, ALT - SGPT.

I. INTRODUCTION

Diabetes mellitus (DM) is recognized as the most common metabolic and endocrine disorder worldwide. It is a metabolic disease characterized by hyperglycemia and glycosuria due to absolute or relative lack of insulin [1]. Diabetes mellitus is defined by the world health organization (WHO), on the basis of laboratory findings as a fasting venous plasma glucose concentration greater than 7.8 mmol/l (200 mg/dl) two hours after a carbohydrate meal or two hours after an oral ingestion of the equivalent of 75 g glucose, even if the fasting concentration is normal [2]. The chronic hyperglycemia of diabetes associated with long term damage, dysfunction and failure of various organs especially the eyes, kidneys, liver, nerves, heart and blood vessels.

Numerous studies have identified that hyperglycemia may lead to oxidative stress and glycation reactions. Over time, the initial glycation products undergo intramolecular rearrangements and oxidation reactions (glycoxidation) and ultimately transform into stable so-called advanced glycation end-products (AGEs). AGE-modification of proteins can alter or limit their functional or structural properties, which ultimately can lead to tissue damage as seen in diabetes. ALP is also used for the assessment of the liver function. It reaches extremely high levels in biliary obstruction. The altered ALP activity may reflect an increased hepatic insulin resistance or oxidative stress [3].

Liver disease is a type of damage to liver cells or is the disease of liver. Symptoms of liver dysfunction include both physical and symptoms related to the digestive problems, blood sugar problems, immune disorders, abnormal absorption of fats and metabolism problems. The most sensitive and widely used liver blood enzymes are - Alkaline phosphatase (ALP), Aspartate amino transferase (AST - SGOT), Alanine amino transferase (ALT - SGPT). These enzymes are normally contained within the liver cells.

73.	Dr. Dharmendra Rathod	

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Protective Effects of Vitamin E on Growth Performance and Tissue Weight Against Toxicity Induced by Hexavalent Chromium in Laboratory Chicks

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ABSTRACT

Chromium can enter in body through air, food and water. Most abundant toxic form of this metal in the environment is Cr(VI). Chromium (VI) readily enters all type of cells through a general action channel of plasma membrane and reduced into Cr(III) by various oxidants. Therefore, present study has been carried out to investigate the effects of vitamin E on growth performance and tissue weight (liver and kidney) in chicks against toxicity induced by hexavalent chromium. Developing chicks (Croilers, *Gallus gallus domesticus*, body weight 100±20 gm) were used as experimental animals. Body weight was taken once in a week for growth performance during experimental period. Tissue weight has been taken after 30 days of treatment. Oral administration of Cr(VI) adversely affects the growth performance of chicks. It is observed that during administration of chromium the animal body weight decreases and tissue weight is also found to be reduced. However, supplementation of vitamin E along with Cr(VI) show significant recovery in body weight of animals as compared to chromium treated chicks. Along with the growth, the weights of different tissues like liver and kidney are also decreases in Cr(VI) treated chicks. Administration of vitamin E in these chicks also significant increase in tissue weight was observed. Thus present study reveals that supplementation of vitamin E significantly protect from the adverse effect of Cr(VI).

KEYWORDS: Vitamin E, Croilers, Hexavalent chromium, Growth performance, Tissue weight

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74.	Dr. Dharmendra Rathod	

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Therapeutic Effect of Hydroalcoholic Extract of Leaves of *Ajuga Bracteosa* on Hematology in Alloxan Induced Diabetic Chick Model

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Abstract:

Ajuga bracteosa is a medicinal herb reported for its effect on diabetes clinical or preclinically. Its leaves have alkaloids, flavonoids, steroids, triterpenoids, saponins and tannins like phenolic compounds. The hydroalcoholic extract of leaves of the herb is of great therapeutic value due to its anti-hyperglycemic effects. The aim of the present study is to determine the therapeutic effect of hydroalcoholic extract of leaves of *Ajuga bracteosa* (Ratpatiya) in alloxan induced diabetic chicks.

Diabetes was induced in chicks by alloxan monohydrate (12 mg/ 100 gm, i.p.). Chicks were divided into three groups including normal control, diabetic control and diabetic treated with leaves of *Ajuga bracteosa*. The group of diabetic chicks were treated with hydroalcoholic extract of *Ajuga bracteosa* (10 mg/ 100 gm, orally) for 30 days daily and considered as diabetic treated group.

The hematological parameters including Hb%, RBCs, WBCs and PCV were evaluated at the end of experiment. One-way ANOVA was used for the statistical analysis and p-values less than 0.05 compared to normal chicks and diabetic control chicks.

Diabetic chicks treated with hydroalcoholic extract of *Ajuga bracteosa* leaves offered significant ($p<0.05$) protection in hematological parameters as Hb%, RBCs and PCV in comparison to diabetic control chicks. However, WBCs numbers were decreased in diabetic chicks treated with hydroalcoholic extract of *Ajuga bracteosa* leaves in comparison to diabetic control chicks. Hence, hydroalcoholic extract of leaves of *Ajuga bracteosa* shows potential therapeutic effect in improving the values of the hematological parameters in alloxan induced diabetic chicks.

Keywords: *Ajuga bracteosa*, alloxan, diabetes, hematological, hydroalcoholic, ANOVA, p-value.

I. INTRODUCTION

Diabetes mellitus is a metabolic disease characterized by hyperglycemia and glycosuria due to absolute or relative lack of insulin [1]. Many metabolic abnormalities and chronic complications are generated from high glucose levels [2]. Dyslipidemia (lipid abnormalities) resulting from uncontrolled hyperglycemia and insulin resistance in diabetic patients is a major risk factor for coronary artery disease, stroke and peripheral vascular disease [3].

Chronic hyperglycemia is associated with microvascular and macrovascular complications that can lead to visual impairment, blindness, kidney disease, nerve damage, amputations, heart diseases and stroke. Diabetes also affects the hematology of a person. The analysis of red blood cell parameters as measured by the red blood cell count and hematocrit (PCV), gives the indication of red cell deformability and the hemorheological state in diabetes. Diabetes mellitus is ranked as seventh among the leading cause of death and considered third when its fatal complications are taken into account [4].

For a long time, diabetics have been treated with several medicinal plants or their extracts based on the folklore medicine [5]. Synthetic hypoglycemic agents can produce serious side effects and they are too

75.	Dr. Dharmendra Rathod	UGC REF NO. – 46322 IF – 3.123

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Antioxidant Effect of Vitamin-E Treatment on Hexavalent Chromium Induced Hepato and Renal Toxicity in Laboratory Chicks

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Abstract

Protection against metal toxicity has been a centre of attraction for industrial hygienists, public health officials, toxicologists and pharmacologists. Hexavalent chromium compounds have been shown to manifest toxic and carcinogenic effects in humans and animals. Since the discovery of the fact that oxidative damage is one of the mechanisms responsible for their toxicity, the use of antioxidants was considered to be a suitable alternative. Antioxidants restricted the uptake and distribution of chromium in liver and other organs. It is well established that vitamin E act as an antioxidant against toxicity induced by different heavy metals. Keeping this in view, present study has been carried out to investigate the protective effects of vitamin E on renal and hepatic enzymes in chicks against toxicity induced by hexavalent chromium. Developing chicks (Croiler, body weight 100±20 gm) were used as experimental animals. The serum alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and creatinine enzymatic activity parameters were selected for the study. Significant decrease of serum (ALT), (AST), (ALP) and creatinine were observed in purely chromium treated groups, while, these values were significantly increased in vitamin E treated groups as compared to chromium treated group. Hence, it may be concluded that the progressive hepatorenal toxicity of hexavalent chromium can be moderately reduced by administrating vitamin E in laboratory chicks.

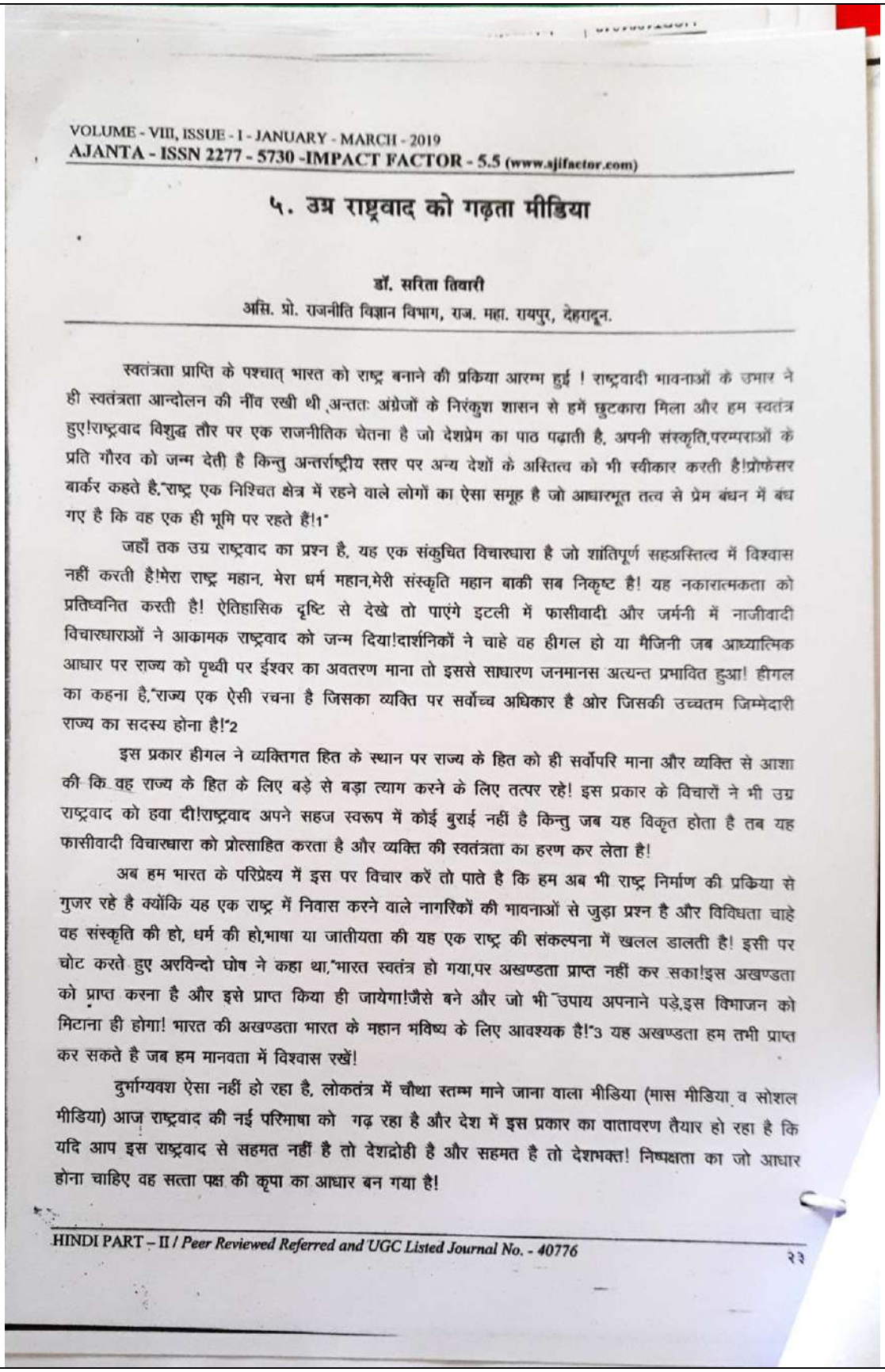
Keywords

Antioxidant, hepatorenal toxicity, hexavalent chromium, vitamin E

*****

INTRODUCTION

Every organ can elicit a specific pattern of enzyme release, which remains not elucidated. Specifically, above normal plasma enzyme activities are considered as diagnostic features for several diseases [1]. Release of enzymes usually follows their respective concentration gradients between an organ, such as the liver, and the blood compartments [2,3,4]. In fact, values of serum enzymes activities ("released") are much higher than the apparent disappearance rate constants and they are also consistent with disappearance rates from plasma to aspartate (AST) and alanine (ALT) aminotransferases, after acute liver injury [5]. However, the mechanisms

76.	Dr. Sarita Tiwari	

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५. उग्र राष्ट्रवाद को गढ़ता मीडिया

डॉ. सरिता तिवारी
असि. प्रो. राजनीति विज्ञान विभाग, राज. महा. रायपुर, देहरादून.

स्वतंत्रता प्राप्ति के पश्चात् भारत को राष्ट्र बनाने की प्रकिया आरम्भ हुई ! राष्ट्रवादी भावनाओं के उभार ने ही स्वतंत्रता आन्दोलन की नींव रखी थी अन्ततः अंग्रेजों के निरंकुश शासन से हमें छुटकारा मिला और हम स्वतंत्र हुए!राष्ट्रवाद विशुद्ध तौर पर एक राजनीतिक चेतना है जो देशप्रेम का पाठ पढ़ाती है, अपनी संस्कृति,परम्पराओं के प्रति गौरव को जन्म देती है किन्तु अन्तर्राष्ट्रीय स्तर पर अन्य देशों के अस्तित्व को भी स्वीकार करती है!प्रोफेसर बार्कर कहते है,"राष्ट्र एक निश्चित क्षेत्र में रहने वाले लोगों का ऐसा समूह है जो आधारभूत तत्व से प्रेम बंधन में बंध गए है कि वह एक ही भूमि पर रहते हैं!1"

जहाँ तक उग्र राष्ट्रवाद का प्रश्न है, यह एक संकुचित विचारधारा है जो शांतिपूर्ण सहअस्तित्व में विश्वास नहीं करती है!मेरा राष्ट्र महान, मेरा धर्म महान,मेरी संस्कृति महान बाकी सब निकृष्ट है! यह नकारात्मकता को प्रतिध्वनित करती है! ऐतिहासिक दृष्टि से देखे तो पाएंगे इटली में फासीवादी और जर्मनी में नाजीवादी विचारधाराओं ने आकामक राष्ट्रवाद को जन्म दिया!दार्शनिकों ने चाहे वह हीगल हो या मैजिनी जब आध्यात्मिक आधार पर राज्य को पृथ्वी पर ईश्वर का अवतरण माना तो इससे साधारण जनमानस अत्यन्त प्रभावित हुआ! हीगल का कहना है,"राज्य एक ऐसी रचना है जिसका व्यक्ति पर सर्वोच्च अधिकार है ओर जिसकी उच्चतम जिम्मेदारी राज्य का सदस्य होना है!"2

इस प्रकार हीगल ने व्यक्तिगत हित के स्थान पर राज्य के हित को ही सर्वोपरि माना और व्यक्ति से आशा की कि वह राज्य के हित के लिए बड़े से बड़ा त्याग करने के लिए तत्पर रहे! इस प्रकार के विचारों ने भी उग्र राष्ट्रवाद को हवा दी!राष्ट्रवाद अपने सहज स्वरूप में कोई बुराई नहीं है किन्तु जब यह विकृत होता है तब यह फासीवादी विचारधारा को प्रोत्साहित करता है और व्यक्ति की स्वतंत्रता का हरण कर लेता है!

अब हम भारत के परिप्रेक्ष्य में इस पर विचार करें तो पाते है कि हम अब भी राष्ट्र निर्माण की प्रकिया से गुजर रहे है क्योंकि यह एक राष्ट्र में निवास करने वाले नागरिकों की भावनाओं से जुड़ा प्रश्न है और विविधता चाहे वह संस्कृति की हो, धर्म की हो,भाषा या जातीयता की यह एक राष्ट्र की संकल्पना में खलल डालती है! इसी पर चोट करते हुए अरविन्दो घोष ने कहा था,"भारत स्वतंत्र हो गया,पर अखण्डता प्राप्त नहीं कर सका!इस अखण्डता को प्राप्त करना है और इसे प्राप्त किया ही जायेगा!जैसे बने और जो भी उपाय अपनाने पड़े,इस विभाजन को मिटाना ही होगा! भारत की अखण्डता भारत के महान भविष्य के लिए आवश्यक है!"3 यह अखण्डता हम तभी प्राप्त कर सकते है जब हम मानवता में विश्वास रखें!

दुर्भाग्यवश ऐसा नहीं हो रहा है, लोकतंत्र में चौथा स्तम्भ माने जाना वाला मीडिया (मास मीडिया व सोशल मीडिया) आज राष्ट्रवाद की नई परिभाषा को गढ़ रहा है और देश में इस प्रकार का वातावरण तैयार हो रहा है कि यदि आप इस राष्ट्रवाद से सहमत नहीं है तो देशद्रोही है और सहमत है तो देशभक्त! निष्पक्षता का जो आधार होना चाहिए वह सत्ता पक्ष की कृपा का आधार बन गया है!

77.	Dr. Sarita Tiwari	

युद्ध और संघर्ष में यौन हिंसा से त्रस्त नारी की स्थिति– वैश्विक संदर्भ में

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राजनीति विज्ञान विभाग
राजकीय महाविद्यालय रायपुर,देहरादून

उग्र राष्ट्रवाद के पक्षधर हीगल ने युद्ध को मानव विकास के लिए अनिवार्य तत्व बताया है! इसके समर्थन में कई प्रकार के तर्कों को भी गढ़ा है! उग्र राष्ट्रवाद की भावना से ओतप्रोत व्यक्ति एक प्रकार की अंधश्रद्धा में जीने लगता है,मेरा राष्ट्र महान ,मेरी संस्कृति महान,मेरा धर्म महान! यही अंधश्रद्धा अन्ततः चरम पर पहुँचकर साम्राज्यवाद और सैन्यवाद को जन्म देती है! यद्यपि आर्थिक कारण भी कई बार इसके लिए उत्तरदायी रहे है! युद्धोन्माद मानवता के लिए घातक है!व्यापक स्तर पर इससे जन व धन की हानि होती है! युद्धों में सबसे आसान शिकार महिलाएं व बच्चे होते है जबकि परणार्थियों की संख्या लाखों में जाती है!

द्वितीय विश्व युद्ध के समय विभिन्न विजेता देशों के सैनिकों द्वारा पराजित देश की महिलाओं को रौंदा गया उन पर अत्याचार व अनाचार किए गए,उत्पीड़न किया गया! इतिहास साक्षी है कि विजेता पक्ष केवल पराजित पक्ष की धन संपदा और मूल्यवान संसाधनों को ही नही लूटता है वरन् महिलाओं को भी भौतिक संपदा मान कर उनका हरण लेता है! इस तरह दमन व शोशण का अंतहीन सिलसिला शुरु हो जाता है! यदि हम भारत के मध्ययुगीन इतिहास पर दृष्टिपात करें तो पाते है कि घूंघट की शुरुआत के लिए विदेशी आकान्ताओं की महिलाओं पर कुदृष्टि भी उत्तरदायी रही जिसके चलते परिवार के सदस्यों द्वारा महिलाओं को सार्वजनिक जीवन से दूर कर दिया गया!

'अभी हाल ही में एक फुटेज बहुत चर्चा में रहा जिसमें कोरियाई सेक्स गुलाम नजर आ रहीं है! इतिहासकारों का अनुमान है कि लगभग 200000 से अधिक कोरियाई औरतों को जापानी सैनिकों के पास भेजा गया था! इन औरतों को 'कंफर्ट वूमन 'के नाम से जाना जाता था! युद्ध के पष्चात इन औरतों को बुरी तरह मार–काट दिया जाता था! 1991 तक दुनियाँ को इसकी भनक ही नही लगी!1'

इनकी सूचनाएं जब तब मीडिया के माध्यम से दुनिया के समक्ष आती है तो हमें उस भयानक दौर का पता चल पाता है! अन्यथा विभिन्न देषों की सरकारों द्वारा ऐसी सूचनाओं को दबा दिया जाता है

निम्न तालिका में हम इन आंकड़ों को देख सकते

कम संख्या	संघर्ष	यौन हिंसा व बलात्कार के अनुमानित आंकड़े
1	द्वितीय चीन–जापान युद्ध, नानकिंग 1937	20,000
2	द्वितीय विष्व युद्ध, सोवियत सेना–जर्मनी संघर्श	100,000–200,000
3	बंगलादेष युद्ध के दौरान पाकिस्तानी सेना 1971	200,000
4	बोस्नियाई युद्ध,1992–95	20,000
5	सिएरा लियोन गृहयुद्ध 1991–2002	50,000 से अधिक
6	रवांडा नरसंहार,1994	500,000

ये बर्बरता के आकड़े किसी भी सभ्य समाज में स्वीकार्य नहीं हो सकते! यद्यपि लोकतन्त्रात्मक व्यवस्था नारियों को कुछ राहत देती है किन्तु आज भी सामाजिक दृश्टि से पुरुशों का वर्चस्व ही उसकी जीवन षैली को तय करता है! पितृसत्तात्मक समाज की जड़े बहुत गहरी है!

'श्रीलंका का उदाहरण लें जहाँ सालों साल चले गृहयुद्ध ने बलात्कार को एक सामान्य घटना बना दिया ! संयुक्त राश्ट्र संघ की पुरुशों और हिंसा जैसे विशय पर की गई एक मल्टी स्टडी के सैंपल में सम्मिलित 14.5 प्रतिषत श्रीलंकाई पुरुशों ने माना था कि उन्होंने किसी न किसी स्त्री का यौन शोशण किया है!'3

औरतों के दमन और शोशण का यह क्रम आज भी जारी है!कहीं कुछ बदला नहीं है! इसमें हम मध्य–पूर्व को ले सकते है और गृहयुद्ध की चपेट में आए छोटे –छोटे अफ्रीकी देषों को भी ले सकते है!21 वीं सदी में ट्यूनीषिया में लोकतन्त्र की माँग को लेकर

78.	Dr. Ashutosh Mishra	

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आचार्य महावीर प्रसाद द्विवेदी का हिन्दी साहित्य के विकास में योगदान

अनुपमा त्रिपाठी
अध्यक्ष,
हिन्दी विभाग,
डी०बी०एस० महाविद्यालय,
देहरादून, उत्तराखण्ड
भारत

आशुतोष मिश्र
असिस्टेंट प्रोफेसर,
राजकीय महाविद्यालय,
मंगलौर, हरिद्वार,
उत्तराखण्ड, भारत

सारांश

हिन्दी भाषा तथा साहित्य के क्षेत्र में युगान्तर उपस्थित करने वाले कवियों तथा लेखकों के प्रेरणास्रोत, खड़ी बोली हिन्दी की भाव–सम्पदा तथा उसके भाषा–वैभव को एक आदर्श, परिष्कृत, प्रौढ़, अनुशासित एवं सुस्थिर स्वरूप प्रदान करने वाले युग–निर्माता साहित्य साधक आचार्य महावीर प्रसाद द्विवेदी का हिन्दी के भाग्योदय में अपना अप्रतिम स्थान है। उनके गम्भीर आदर्श एवं उदात्त व्यक्तित्व तथा व्यापक कृतित्व में सर्वत्र अनुरूपता के दर्शन होते हैं।

मुख्य शब्द : आचार्य महावीर प्रसाद द्विवेदी, हिन्दी साहित्य।

प्रस्तावना

इण्डियन प्रेस, प्रयाग से प्रकाशित होने वाली "सरस्वती" पत्रिका के सम्पादक रूप में आचार्य द्विवेदी की साहित्य–साधना अपनी बहुमुखी शक्ति के साथ प्रकाश में आती है। "सरस्वती" पत्रिका सामान्य रचनाओं को प्रकाश में लाने वाली पत्रिका नहीं थी, वरन भारतीयता, देशप्रेम एवं समाज–सुधार की भावना से ओत प्रोत कवियों एवं साहित्यकारों के लिए एक आदर्श शिक्षण संस्था का कार्य कर रही थी।

"निज भाषा उन्नति" तथा राष्ट्रीयता, देशप्रेम एवं समाज सुधार की भावना भारतेन्दु युग में ही अंकुरित हो चुकी थी परन्तु उसका पल्लवन एवं पूर्ण विकास हिन्दी साहित्य की विविध विधाओं के माध्यम से द्विवेदी युग में हुआ। भारतेन्दु युग में गद्य शैली पर आधारित रचनाएं तो टूटी–फूटी एवं अस्त–व्यस्त ब्रज–मिश्रित खड़ी बोली में होने लगी थी परन्तु काव्य रचना ब्रज भाषा में ही चल रही थी। आचार्य द्विवेदी ने खड़ी बोली को काव्य–भाषा के रूप में प्रतिष्ठित करने तथा उसे परिष्कृत, सुसंस्कृत, व्याकरणसम्मत एवं सशक्त रूप प्रदान करने का गुरूतर दायित्व अपने ऊपर लिया। प्रारम्भ में "सरस्वती" पत्रिका के लिए सामग्री का अभाव रहा। जो कुछ सामग्री उपलब्ध भी हो रही थी, वह भाषा एवं व्याकरणगत त्रुटियों से परिपूर्ण तथा वस्तुपक्ष की शिथिलता लिए होती थी। द्विवेदी जी एक ओर "सरस्वती" के लिए रात दिन लिखते थे तथा दूसरी ओर कवियों एवं लेखकों की रचनाओं का वस्तु एवं भाषागत संशोधन करते थे। आचार्य द्विवेदी जैसे कर्मनिष्ठ साहित्य–सेवी को पाकर हिन्दी अपने भाव–सौन्दर्य तथा भाषा–वैभव में धन्य हो उठी।

हिन्दी साहित्य एवं भाषा के "कायाकल्प" हेतु द्विवेदी जी का प्रथम संकल्प था ब्रज भाषा के स्थान पर शुद्ध, परिनिष्ठित, प्रांजल एवं सुसंस्कृत खड़ी बोली की प्रतिष्ठा। खड़ी बोली को ब्रज भाषा के दलदल से निकालकर प्रौढ़ता एवं सुनिश्चितता प्रदान करते हुए राष्ट्रभाषा के पद पर अलंकृत होने योग्य बनाने का प्रथम श्रेय आचार्य द्विवेदी को ही है।

साहित्य सुधारक की भूमिका में

हिन्दी की भाव–सम्पदा को आदर्श, गम्भीर एवं गरिमामय स्वरूप प्रदान करने के निमित्त उन्होंने साहित्य से श्रृंगारिकता के पूर्ण बहिष्कार का संकल्प लिया। रीतिकाल से चली आ रही श्रृंगारिक अश्लीलता को समाप्त करने के प्रयास में द्विवेदी जी इतने सतर्क हो गए कि उन्होंने "प्रेम" और "सौंदर्य" को भी हिन्दी साहित्य से निष्कासित कर दिया, जिसके आवरण में श्रृंगारिकता के छिपे होने की संभावना थी। मैथिलीशरण गुप्त के "साकेत" की पाण्डुलिपियों में संशोधन, निराला की "जूही की कली" कविता को उपेक्षापूर्वक सरस्वती में छापने से इंकार कर देना तथा "कालिदास की निरंकुशता" शीर्षक अपने लेख में संस्कृत के कवि कालिदास के अमर्यादित तथा अविवेकपूर्ण श्रृंगार–वर्णन पर कठोर प्रहार करना उनके श्रृंगार–विरोधी संकल्प के सशक्त प्रमाण हैं।

79.	Dr. Ashutosh Mishra	

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Shrinkhla Ek Shodhparak Vaicharik P

समीक्षक और शोधक डॉ. 'तरूण'

सारांश

डॉ.रामेश्वरलाल खंडेलवाल'तरूण'मनस्वी, विद्वान,सफल शिक्षक और प्रख्यात कवि थे। उनके साहित्य में राष्ट्र प्रेम की भावना परिलक्षित होती है। सहृदय कवि ने भी सरस्वती की सतत साधना करते हुए अपनी साहित्य संपदा में अपूर्व श्रीवृद्धि की है। उनकी यह संपदा से अनुसंधान करने वालों के लिए मील का पत्थर साबित होगी। उनकी साहित्य संपदा से आम आदमी भारतीय संस्कृति को आसानी से आत्मसात् कर पावेगा। उनके साहित्य में कवि, लेखक, समालोचक, समीक्षक तथा शिक्षक सभी के लिए पर्याप्त स्थान है।

मुख्य शब्द : तरूण के काव्य में प्रकृति, आधुनिक हिंदी कविता में प्रकृति चित्रण, जयशंकर प्रसाद वस्तु और कला।

आशुतोष मिश्र
सहायक प्रोफेसर,
हिन्दी विभाग,
राजकीय महाविद्यालय,
मंगलौर, हरिद्वार,
उत्तराखण्ड, भारत

अनुपमा त्रिपाठी
विभागाध्यक्ष,
हिन्दी विभाग,
डी. बी. एस. पी.जी. कॉलेज,
देहरादून, उत्तराखण्ड, भारत

प्रस्तावना

डॉ रामेश्वरलाल खण्डेलवाल 'तरूण' अपनी अनुसन्धानपरक आलोचना प्रवृत्ति के कारण विषय के मूल में, उसकी अन्तरतह में जाकर गूढ़–निगूढ़ तत्वों को उकेरने की कला में निष्णात हैं। परिणामतः विषय की सूक्ष्मता उनकी दृष्टि से कहीं भी ओझल नहीं हो पाई है और प्रकृत विषय वस्तु एवं शिल्प की ऐतिहासिक अन्वेषणपरक समालोचना हमारे सामने प्रस्तुत हो सकी है। उनमें हमें एक ओर विषय–प्रतिपादन की रसज्ञता तथा मार्मिकता का परिचय मिलता है, वहीं दूसरी ओर आलोचना–प्रत्यालोचना के गहरे तेवरों के भी संदर्शन होते हैं। एक शोधक की तरह उनकी आलोचना स्पष्टतः दो धाराओं में चलती है– सिद्धान्त पक्ष और व्यवहार पक्ष। विषय चाहे वस्तुनिष्ठ हो अथवा आत्मनिष्ठ उन्होंने सिद्धान्त का आंकलन कर ही लिया है– प्रकृति क्षेत्र की व्यापकता हो या प्रेम–सौन्दर्य की, सांस्कृतिक–काल्पनिक गहनता, उन्होंने सिद्धान्त के अनुकूल सीमाएँ प्रस्तुत की हैं और कृति–विश्लेषण से भी सिद्धान्त निकाले हैं।

अध्ययन का उद्देश्य

डॉ रामेश्वरलाल खण्डेलवाल 'तरूण' बहुमुखी प्रतिभा संपन्न साहित्यकार थे। उनका गद्य और पद्य दोनों में समान योगदान था। जिसके अध्ययन मात्र से ही अनुसंधान करने वाले डॉ. तरूण की सर्जन धर्मिता की भावप्रवण से परिचित होगें और उनके साहित्य के साथ–साथ शोधार्थियों तथा ज्ञान पिपासुओं का उत्तरोत्तर विकास संभव हो पाएगा। ऐसा शोध सार का उद्देश्य इसमें समाहित है।

काव्य में प्रकृति चित्रण

यह डॉ. 'तरूण' की प्रारम्भिक कृति है। यह एक ऐतिहासिक उपलब्धि की रचना है– क्योंकि प्रारम्भ में प्रकृति–चित्रण को लेकर एकाध पुस्तक ही आई थी : स्वयं लेखक ने स्वीकारा है कि उनका मूल उपजीव्य आचार्य रामचन्द्र शुक्ल का निबन्ध रहा है, पर इस मूल भित्ति पर लेखक ने जिस भवन का निर्माण किया है, वह भव्य, मनोहर और सरस–ग्राह्य हैं। पूरी पुस्तक के 199 पृष्ठों में लेखक ने विषय के वैविध्य– प्रसार को आगत करने की पूरी कोशिश की है। इसमें छह प्रकरण है प्रथम दो प्रकरण तो सिद्धान्त पक्ष के हैं। पहले प्रकरण में प्रकृति के साथ काव्य एवं जीवन के विविध एवं महत्वपूर्ण प्रसंगो का सम्बन्ध निरूपित किया गया है। दूसरा प्रकरण प्रकृति–चित्रण की सैद्धान्तिकी है। इसके अन्तर्गत (1) आलम्बन, (2) उद्दीपन, (3) अलंकार रूप, (4) रहस्यभावना की अभिव्यक्ति, (5) मानवीकरण, (6) उपदेश, (7) पृष्ठभूमि या वातावरण निर्माण, (8) प्रतीक आदि वर्णन प्रकारों का विवेचन किया गया है। तृतीय प्रकरण में संस्कृत एवं अंग्रेजी साहित्य में प्रकृति की उच्चाशयता एवं रचनाकारों के उद्‌गारों के माध्यम से प्रकृति के माध्यम से प्रकृति की विविध स्वरूपा शक्ति को रूपायित किया गया है। चतुर्थ प्रकरण से मूलतः विषय का प्रारम्भ होता है– जहाँ आदिकाल भक्तिकाल और रीतिकाल के काव्यों में प्रकृति को देखने की दिशा–दृष्टि खुली है। पंचम प्रकरण प्रकृति–प्रेम की उल्लासमयी सहज, प्रसन्न, अन्तः सलिला का नैसर्गिक भावना के पुनरावर्तन की कहानी है। यह युग

80.	Prof (Dr) Jyoti Khare	

Studies in Indian Place Names
(UGC Care Journal)

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Forensic Accounting in India: Its Scope and Implementation (A Study on Banking Sector in Dehradun, Uttarakhand)

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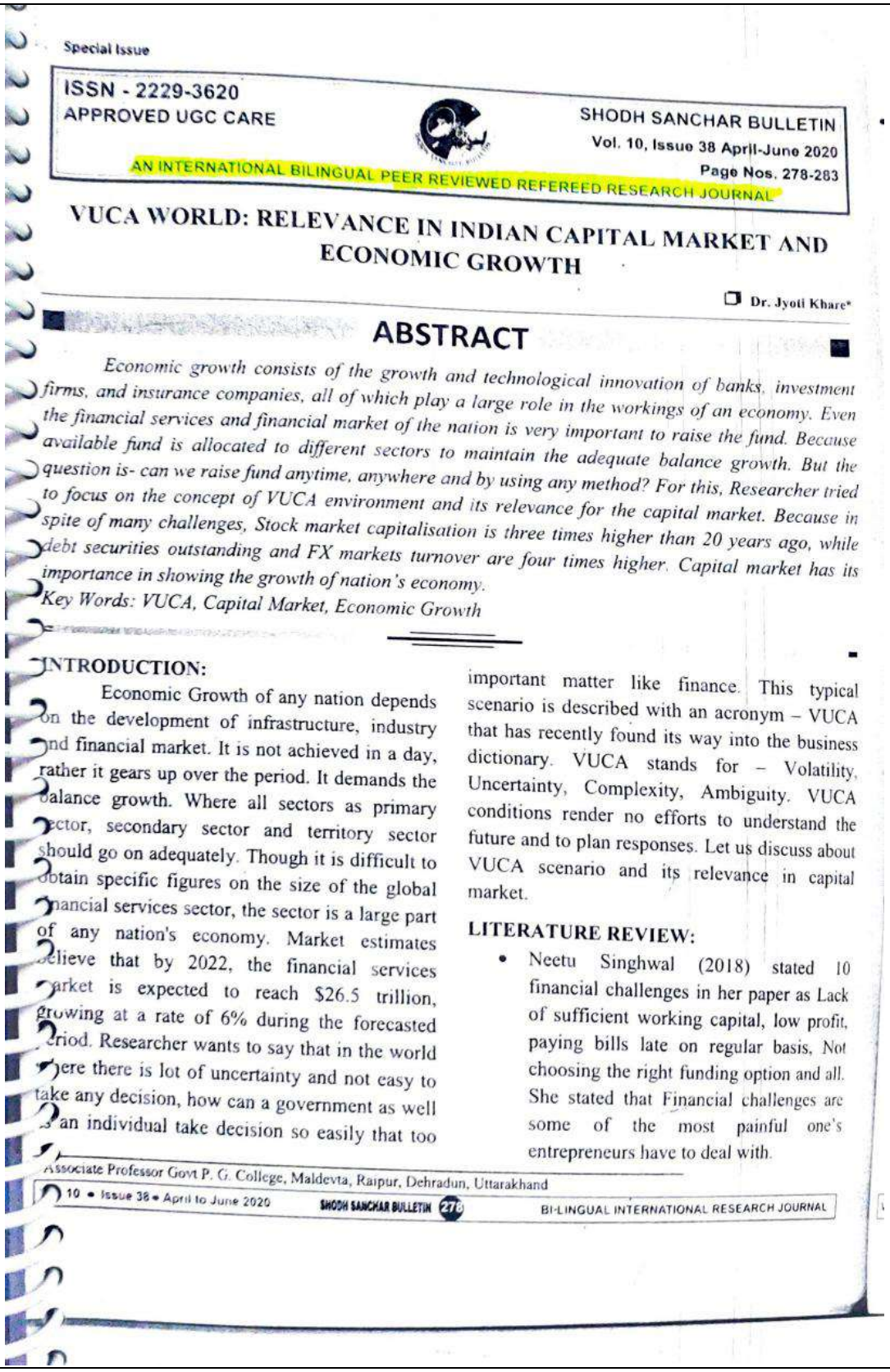
ABSTRACT

Accounting is an intricate procedure since it is a piece of an economy's legitimate and administrative framework. It is concerned about creating transparency and caring the partners of economy legitimately or indirectly. Right now, Forensic accounting is the particular sort of accounting. "Forensic" signifies "appropriate for use in a court of law", implies work to be accomplished for the standard and potential result can be utilized in or reasonable to courts of judicature or to open conversation. Forensic accounting researches money related wrongdoing and record monetary misrepresentation and professional wrongdoing. Researcher tried to understand the concept of forensic accounting while it seems that auditing also works same as forensic accounting. The question here arises that what is the need of forensic accounting. To understand this, this study threw light on the difference between forensic accounting and forensic auditing and also examined the scope and need of forensic accounting. The integration of accounting, auditing and investigative skills yields the specialty known as forensic accounting. Litigation support and investigations are the two main areas in forensic accounting. The knowledge and skills are acids that can promote proper handling of evidence, accurate reporting, and the delivery of justice for those that have fallen victim to financial crimes. Forensic accounting communicates financial information clearly and concisely in a courtroom setting where the experts of the forensic area come in unfolding the fraud. A financial reporting system of worldwide standard is a requirement for attracting foreign as well as present and prospective investors at home alike. Forensic accounting is helpful to analyze, interpret, summarize and present complex financial and business-related issues in a manner which is both understandable and properly supported. So, Forensic accounting being a legal term, helps the Government in the enforcement of regulatory requirements.

Keywords: Forensic accounting, Forensic accountant, Financial Fraud, external auditing.

INTRODUCTION

The fast advancement of worldwide exchange and internationalization of firms, the improvements of new communication technologies, the issue of universal competitive forces is upsetting the budgetary condition to an enormous degree. As the organizations advances, the issues of complexities are additionally expanding. And under these contortions, the public sector and private sector, both are the key part of our economy and are clamped with series of fraud. Public Sector Banks in India lost at least 227.43 billion (Rs 22,743 crore) owing to fraudulent banking activities between 2012 and 2016, according to an IIM-Bangalore study. Electronics and Information-technology minister Ravi Shankar Prasad (ET,2018) said "there have been over 25,600 cases of banking fraud, worth Rs 1.79 billion up to December 21 last year". This is known as financial crime. Financial crimes may even go undetected much of the time. In the past, an external audit was a specialized region of the field, where proof was accumulated and evaluation of financial reports was made. The broad corporations of today require much more constancy than organizations before. The diverse accounting approach is required in competitive era where misrepresentation couldn't be permitted. In this paper, researcher has dealt with the working of forensic accounting in broad public/private segment banks which can be utilized to diminish the misrepresentation activities. Since Banks assume a key job to accomplish the development and improvement of country. Banks are viewed as the shop of the world, the operational hub of economies and money of country and the gauge of its financial point of view (Sharma,1974). We see

81.	Prof (Dr) Jyoti Khare	

Special Issue

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AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

VUCA WORLD: RELEVANCE IN INDIAN CAPITAL MARKET AND ECONOMIC GROWTH

Dr. Jyoti Khare*

ABSTRACT

Economic growth consists of the growth and technological innovation of banks, investment firms, and insurance companies, all of which play a large role in the workings of an economy. Even the financial services and financial market of the nation is very important to raise the fund. Because available fund is allocated to different sectors to maintain the adequate balance growth. But the question is- can we raise fund anytime, anywhere and by using any method? For this, Researcher tried to focus on the concept of VUCA environment and its relevance for the capital market. Because in spite of many challenges, Stock market capitalisation is three times higher than 20 years ago, while debt securities outstanding and FX markets turnover are four times higher. Capital market has its importance in showing the growth of nation's economy.

Key Words: VUCA, Capital Market, Economic Growth

INTRODUCTION:

Economic Growth of any nation depends on the development of infrastructure, industry and financial market. It is not achieved in a day, rather it gears up over the period. It demands the balance growth. Where all sectors as primary sector, secondary sector and territory sector should go on adequately. Though it is difficult to obtain specific figures on the size of the global financial services sector, the sector is a large part of any nation's economy. Market estimates believe that by 2022, the financial services market is expected to reach $26.5 trillion, growing at a rate of 6% during the forecasted period. Researcher wants to say that in the world where there is lot of uncertainty and not easy to take any decision, how can a government as well as an individual take decision so easily that too important matter like finance. This typical scenario is described with an acronym – VUCA that has recently found its way into the business dictionary. VUCA stands for – Volatility, Uncertainty, Complexity, Ambiguity. VUCA conditions render no efforts to understand the future and to plan responses. Let us discuss about VUCA scenario and its relevance in capital market.

LITERATURE REVIEW:

- Neetu Singhwal (2018) stated 10 financial challenges in her paper as Lack of sufficient working capital, low profit, paying bills late on regular basis, Not choosing the right funding option and all. She stated that Financial challenges are some of the most painful one's entrepreneurs have to deal with.

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82.	Prof (Dr) Daksha Joshi	

10

BOYCOTT CHINA, ATMANIRBHAR BHARAT AND A WAY FORWARD

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Abstract:

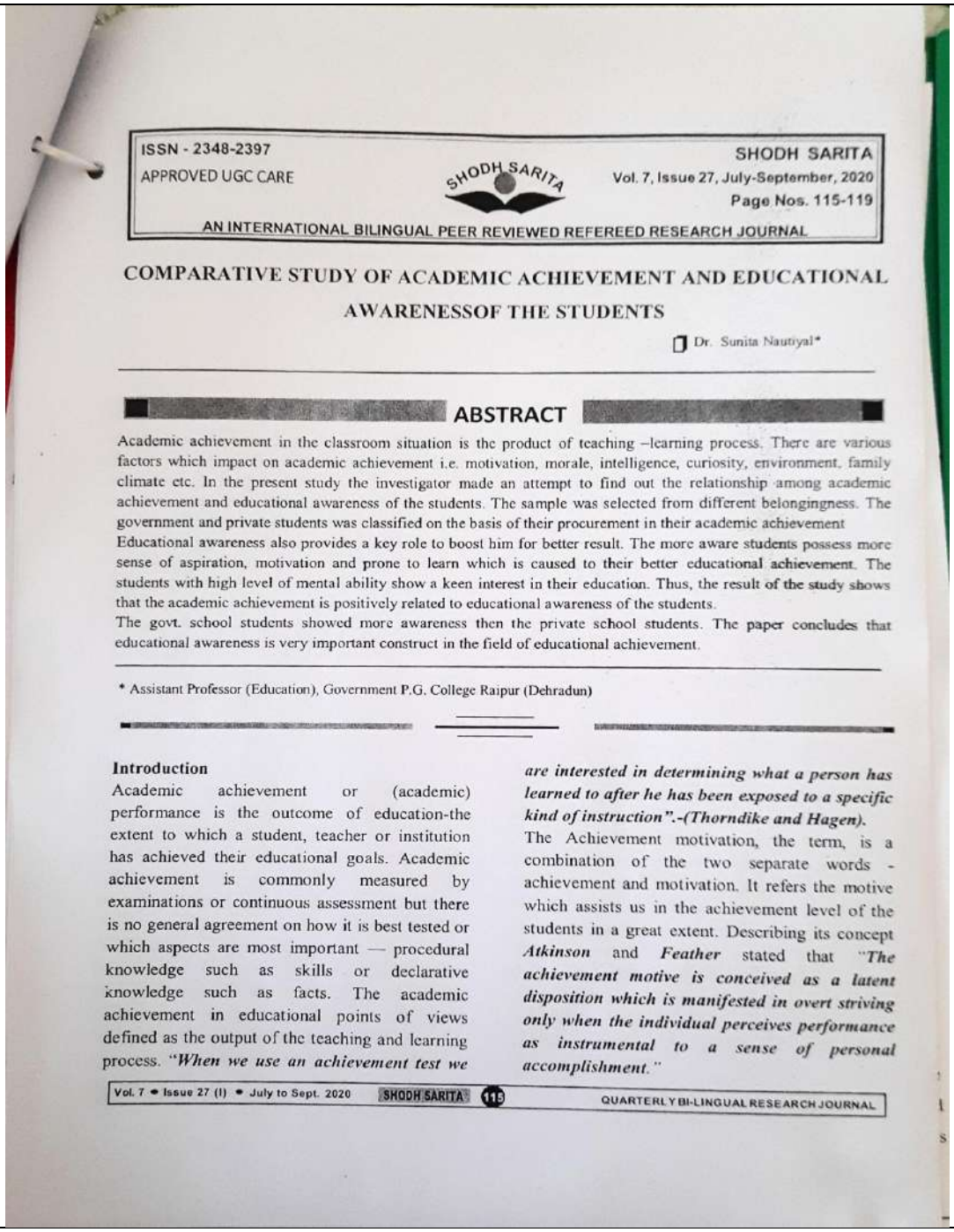
In this article, I have discussed few pertinent issues concerning the 'Boycott China' movement. From the standpoint of economics and keeping peace with our neighbouring country, I have argued why this movement in its current form is futile, and possibly counter-productive. In the pursuit of making our nation self-reliant, it seems unwise to inviteself-inflicted economic loss with no apparent benefits in the foresight.Moreover, such an appeal seems inconsistent with India's amicable efforts of developing positive bilateral relations, mutual investments and inclusive trade with China. Our overarching interests of prosperity and happiness can only be achieved through the proven ideals of capitalism. In my opinion, 'Atmanirbhar Bharat' scheme lays out a next generation of economic reforms, which would succour local industries and businesses to thrive. This shifts our focus towards the enablement of Indian businesses such that they could offer compelling services and superior products at competing prices, rendering the motivated rejection of imports irrelevant.

Keywords: Boycott China, Atmanirbhar Bharat, Self-Reliant India, Capitalism, Make in India

Amidst the Covid-19 crisis, we are witnessing a yet another spell of the Boycott China movement. Social media is flooded with an appeal to denounce Chinese products. Although 'No China' campaign is neither new nor exclusive to India. This time, remarkably, several prominent figures, public intellectuals and celebrities have ushered this campaign, which is intended to trounce Chinese dominance through waging 'wallet war - as famously coined by Sonam Wangchuk, founding-director of the Students' Educational and Cultural Movement of Ladakh'. Their proposal calls for a mass scale rejection of Chinese products and an instructed adoption of 'swadeshi (made in India)', which will strengthen our economy while weakening China's.However, neither the Government of India, nor any renowned body of economists has explicitly endorsed this movement. While most of the efforts from our Govt.'s end have centred on promoting self-reliance, we have also made efforts to strengthen the relationship with our neighbouring country.In the article, I will present a critical analysis of the aforementioned movement from two perspectives: economics and peace with neighbours. I will also present a way-forward for meeting the ultimate objective of this movement, i.e. economic growth and self-reliance.

What it means and takes to boycott Chinese products?

It is virtually impossible to find an absolutely indigenous product with no contribution of China. Almost every value chain invariably involves complex interconnectedness of nations at all levels. We depend on China for a range of raw materials and finished goods. At present, China constitutes 5.08% and 13.7% of our total export and import, respectively. In 2018-19, India's total import from china amounted to 70.31bn $, and the export to China

83.	Dr. Sunita Nautiyal	

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COMPARATIVE STUDY OF ACADEMIC ACHIEVEMENT AND EDUCATIONAL AWARENESSOF THE STUDENTS

Dr. Sunita Nautiyal*

ABSTRACT

Academic achievement in the classroom situation is the product of teaching –learning process. There are various factors which impact on academic achievement i.e. motivation, morale, intelligence, curiosity, environment, family climate etc. In the present study the investigator made an attempt to find out the relationship among academic achievement and educational awareness of the students. The sample was selected from different belongingness. The government and private students was classified on the basis of their procurement in their academic achievement
Educational awareness also provides a key role to boost him for better result. The more aware students possess more sense of aspiration, motivation and prone to learn which is caused to their better educational achievement. The students with high level of mental ability show a keen interest in their education. Thus, the result of the study shows that the academic achievement is positively related to educational awareness of the students.
The govt. school students showed more awareness then the private school students. The paper concludes that educational awareness is very important construct in the field of educational achievement.

* Assistant Professor (Education), Government P.G. College Raipur (Dehradun)

Introduction

Academic achievement or (academic) performance is the outcome of education-the extent to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important — procedural knowledge such as skills or declarative knowledge such as facts. The academic achievement in educational points of views defined as the output of the teaching and learning process. ***"When we use an achievement test we are interested in determining what a person has learned to after he has been exposed to a specific kind of instruction".-(Thorndike and Hagen).***

The Achievement motivation, the term, is a combination of the two separate words - achievement and motivation. It refers the motive which assists us in the achievement level of the students in a great extent. Describing its concept ***Atkinson*** and ***Feather*** stated that ***"The achievement motive is conceived as a latent disposition which is manifested in overt striving only when the individual perceives performance as instrumental to a sense of personal accomplishment."***

84.	Dr. Sunita Nautiyal	

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SHODH SANCHAR BULLETIN
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AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

A STUDY OF SELF- CONCEPT AND ITS EFFECT ON ACADEMIC ACHIEVEMENT OF THE STUDENTS STUDYING IN GOVERNMENTED AND SELF-FINANCING HIGH SCHOOLS

Dr. SunitaNautiyal *

ABSTRACT

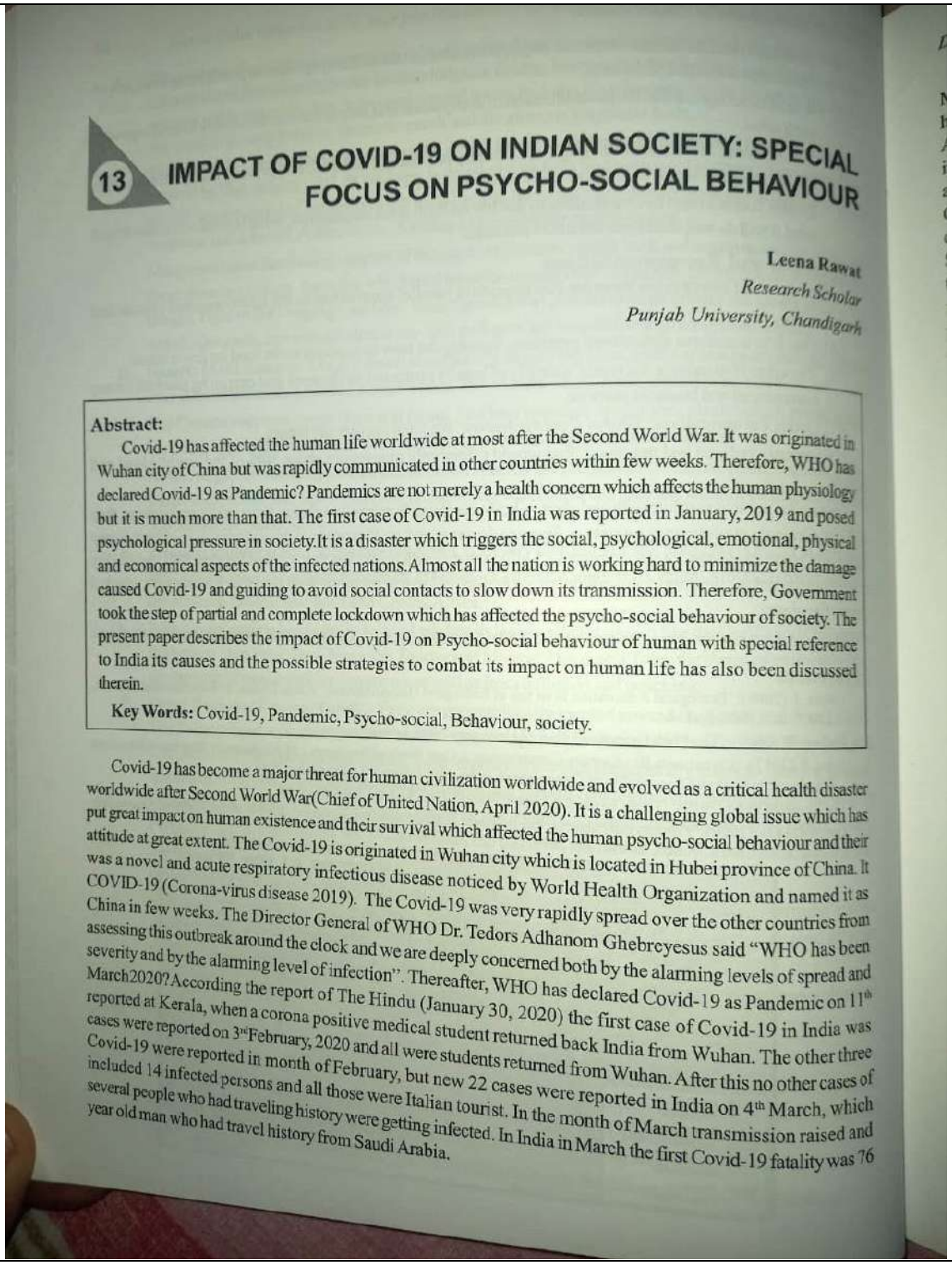
'Education is a principal instrument in awakening the child to cultural values, preparing him/her for later professional life and to adjust in their social life'. Education is a process that inculcates the social and cultural values in the child. Each individual whether human or animal has the ability of learning. Allport 1961 has described self concept as "something of which we are immediately aware. We think of it as the warm, central private region our life. As such it plays a crucial part in our consciousness (a concept broader themselves) in our personality a concept broader than consciousness and in our organism (a concept broader than personality). Academic achievement in general, refers to the degree or level of success of proficiency, attained in some specific area, concerning scholastic or academic work. Thus, academic achievement is the competence of the students show in the school subjects in which, they have received instruction. It is also necessary that besides general education up to secondary level, opportunities for improvement of vocational knowledge and skill should be provided at the higher secondary level to enable some students to be employable.

Key words- Academic Achievement, Self-concept, and Self-finance school.

* Assistant Professor (Education), Government P.G. College Raipur (Dehradun)

Introduction

'Education is a principal instrument in awakening the child to cultural values, preparing him/her for later professional life and to adjust in their social life'. Education is a process that inculcates the social and cultural values in the child. "Education is a man making process" (Vivekananda). In its technical sense, education is the process by which; society deliberately transmits its accumulated knowledge, skills and values from one generation to another. Each individual whether human or animal has the ability of learning. The Rashtriya Madhyamik Shiksha Abhiyan is committed to universalize quality education at Secondary and Higher Stage. The focus in quality interventions would have to be on meeting the complex needs of this stage in terms of quality infrastructure, Management Information System, curriculum development, learning resources, teacher qualification, competency, subject specific deployment in schools, in service training of teachers and heads of the school, academic support at all level, classroom based support and supervision issues etc. Allport 1961 has described self-concept as "something of which we are immediately aware.

85.	Dr. Leena Rawat	

13 IMPACT OF COVID-19 ON INDIAN SOCIETY: SPECIAL FOCUS ON PSYCHO-SOCIAL BEHAVIOUR

Leena Rawat
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Abstract:

Covid-19 has affected the human life worldwide at most after the Second World War. It was originated in Wuhan city of China but was rapidly communicated in other countries within few weeks. Therefore, WHO has declared Covid-19 as Pandemic? Pandemics are not merely a health concern which affects the human physiology but it is much more than that. The first case of Covid-19 in India was reported in January, 2019 and posed psychological pressure in society.It is a disaster which triggers the social, psychological, emotional, physical and economical aspects of the infected nations. Almost all the nation is working hard to minimize the damage caused Covid-19 and guiding to avoid social contacts to slow down its transmission. Therefore, Government took the step of partial and complete lockdown which has affected the psycho-social behaviour of society. The present paper describes the impact of Covid-19 on Psycho-social behaviour of human with special reference to India its causes and the possible strategies to combat its impact on human life has also been discussed therein.

Key Words: Covid-19, Pandemic, Psycho-social, Behaviour, society.

Covid-19 has become a major threat for human civilization worldwide and evolved as a critical health disaster worldwide after Second World War(Chief of United Nation, April 2020). It is a challenging global issue which has put great impact on human existence and their survival which affected the human psycho-social behaviour and their attitude at great extent. The Covid-19 is originated in Wuhan city which is located in Hubei province of China. It was a novel and acute respiratory infectious disease noticed by World Health Organization and named it as COVID-19 (Corona-virus disease 2019). The Covid-19 was very rapidly spread over the other countries from China in few weeks. The Director General of WHO Dr. Tedors Adhanom Ghebreyesus said "WHO has been assessing this outbreak around the clock and we are deeply concerned both by the alarming levels of spread and severity and by the alarming level of infection". Thereafter, WHO has declared Covid-19 as Pandemic on 11th March2020?According the report of The Hindu (January 30, 2020) the first case of Covid-19 in India was reported at Kerala, when a corona positive medical student returned back India from Wuhan. The other three cases were reported on 3rdFebruary, 2020 and all were students returned from Wuhan. After this no other cases of Covid-19 were reported in month of February, but new 22 cases were reported in India on 4th March, which included 14 infected persons and all those were Italian tourist. In the month of March transmission raised and several people who had traveling history were getting infected. In India in March the first Covid-19 fatality was 76 year old man who had travel history from Saudi Arabia.

86.	Prof (Dr) Pooja Kukreti	

HIGHER EDUCATION IN UTTARAKHAND: LEADERSHIP, PERSPECTIVE AND RESTRUCTURING FOR GLOBAL QUALITY STANDARDS

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ABSTRACT

Knowledge is power. A developed nation is inevitably an educated nation. The emergence of India as a knowledge-based service driven economy has made its human capital its major strength and opportunity for growth. The State of Uttarakhand took a big leap in Higher Education Sector since its inception as a new state in 2000. From an initial 64 higher educational institutions at the time of formation of the state, the number has gone up to over 450 institutes (Government and Private) inclusive of 36 Universities with 1 Central University and 5 Institutes of National Importance, Postgraduate and Graduate Colleges, Engineering, Professional, Education, Medical, Dental, Ayurvedic Colleges. The magnitude of expansion in the last two decades has been massive, a proud achievement for the State, with a literacy rate of 79.63% (Census 2011). This paper addresses the key question of Quality vs. Quantity. It also reviews the imperatives and challenges of this hilly state to meet global quality standards in higher education.

Key Words: *Economy, global standards, higher education, literacy rate.*

INTRODUCTION

Unlike China, Japan or other economic giants, India's growth has not been led by manufacturing but instead by the nation's enormous pool of skilled workers has allowed the country to rise quickly up the economic value chain in several knowledge based industries. With over 12 lakh of the higher education age group students living in Uttarakhand, the State has an important responsibility to prepare its youth for the future and embrace the opportunity for sustainable economic growth and prosperity.

The region, now known as the hill state of Uttarakhand, has a rich and inspiring centuries old history as a center of higher education and learning. According to the Indian mythology it is believed that the Kauravas and Pandavas were trained by the revered Guru Dronacharya in the foothills of Himalayas, the reason why Dehradun, the capital city of Uttarakhand, is also known as Drona Nagri.

The State of Uttarakhand (initially called Uttaranchal) was carved out of Uttar Pradesh in the year 2000, and since then several new colleges, universities and professional institutions have mushroomed across the region. The steep rise in the number of these institutions, both private and government, is seen by many as big strides towards growth and development of educational facilities in the Hill State, however, the parallel reality is that we have an ever increasing number of educated yet

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STRESS EFFECTS ON CANOPY GROWTH AND ARCHITECTURE: A CASE STUDY ON SAL MORTALITY

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***Abstract*:** Disturbances and fragmentation of the study area- Barkot Range (Moist Deciduous Sal Forest, Dehradun Forest Division) resulted in changes in the physical environment due to microclimatic variations, altered species composition and soil properties and had severe implications on the physiological functioning of the Sal trees. Two *Shorea robusta* (Sal) stands one containing many Sal trees with canopy dieback, mortality site (MS) and the other with healthy green, full crowns, non-mortality site (NMS) were selected. The paper investigates the soil moisture status of the two sites and evaluates effect of nutrient and water stress on the canopy growth and architecture of the Sal trees. In the present study, the difference in the average soil moisture percentage in the NMS (14.30%) and MS (12.74%) was statistically significant, indicating lower moisture availability in the mortality site in comparison to the non-mortality site. Tree growth increment was affected especially leaf production and lateral branching, which was greatly reduced. Sal stressed trees of the mortality site had highly reduced canopy growth. The crown height increased invariably however the crown width had greatly reduced. In general, canopy height was positively correlated to the bole height of the healthy Sal trees in the non- mortality site. No such relationship was obtained for stressed Sal trees in the mortality site.

Keywords: **Canopy height, microclimate, Sal mortality, soil moisture, water stress.**

INTRODUCTION

Forest Disturbances influence the ecological functions of the forest community (Sagar et al. 2003). Initially once disturbance sets in; it increases the predisposition of a forest to further disturbances. Although the stressful event is merely temporary, the vitality of the plant becomes weaker the longer the stress is maintained. It is known that one of the principal effects of disturbances is to alter the availability of the resources. While one resource may be adequate or abundant another resource may be lacking.

Shorea robusta Gaertn. F. (Sal) is a commercially valuable widely distributed tree of the Indian subcontinent. It is a dominant tree species in the tropical moist as well as dry deciduous forests in India (Champion and Seth 1968). There is almost a continuous belt of Sal stretching along the Sub-Himalayan tract from Punjab to Assam in the northern Indian region. Sal forests are among the most disturbed forests due to anthropogenic disturbances and various chronic stress factors have been the cause of mortality of this important tree species and subsequent reduction in the forest area over the past decades. Sal forest area is 17.86% of the forest cover of the state (ISFR 2019).

Investigations on mortality of Sal in the Barkot Range (Moist Deciduous Forest in Dehradun Forest Division) were initiated. The predisposing stress factor in the Barkot forest had been removal of forest cover or corridor (Negi and Chauhan 2002). Typical dieback of the crown of the trees with drying from apical branches spreading progressively downwards was observed in the mortality site. The dying of Sal was sporadic and random in occurrence, sometimes in patches also. This paper evaluates the effects of water and nutrient stress on the canopy growth and architecture of the Sal trees.

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Research Article

ALOE VERA: MEDICINAL USES AND A NOVEL METHOD TO PREPARE *ALOE VERA* JUICE

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Aloe vera; glucomannans; biological activities, therapeutic; juice.

ABSTRACT

Many of the health benefits associated with *Aloe vera* have been attributed to the polysaccharides contained in the gel of the leaves. The thick fleshy leaves of Aloe plants contain not only cell wall carbohydrates such as cellulose and hemicellulose but also contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids, amino acids and carbohydrates such as acetylated mannans. The most prominent monosaccharide is mannose-6-phosphate and the most common polysaccharides are called glucomannans [beta-(1,4)-acetylated mannan]. While the known biological activities along with the therapeutic effects of *Aloe vera* will be briefly discussed, it is the aim of this review to further highlight a novel, effective and a cheap method for the preparation of *Aloe vera* juice.

INTRODUCTION

The *Aloe vera* plant has been known and used for centuries for its health, beauty, medicinal and skin care properties. The name *Aloe vera* derives from the Arabic word "Alloeh" meaning "shining bitter substance," while "vera" in Latin means "true." 2000 years ago, the Greek scientists regarded *Aloe vera* as the universal panacea. The Egyptians called Aloe "The plant of immortality." Today, the *Aloe vera* plant has been used for various purposes in dermatology [1].

Plant

The Botanical name of *Aloe vera* is *Aloe barbadensis* Miller. It belongs to Asphodelaceae (Liliaceae) family, and is a shrubby or arborescent, perennial, xerophytic, succulent, pea- green color plant. It grows mainly in the dry regions of Africa, Asia, Europe and America. In India, it is found in Rajasthan, Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu.

Anatomy

The plant has triangular, fleshy leaves with serrated edges, yellow tubular flowers and fruits that contain numerous seeds. Each leaf is composed of three layers: 1) An inner clear gel that contains 99% water and rest is made of glucomannans, amino acids, lipids, sterols and vitamins. 2) The middle layer of latex which is the bitter yellow sap and contains anthraquinones and glycosides. 3) The outer thick layer of 15–20 cells called as rind which has protective function and synthesizes carbohydrates and proteins. Inside the rind are vascular bundles responsible for transportation of substances such as water (xylem) and starch (phloem) [2].

Why often referred as miraculous plant

The raw pulp of *A. vera* contains approximately 98.5% water, while the mucilage or gel consists of about 99.5% water. The remaining 0.5 – 1% solid material consists of a range of compounds including water-soluble and fat-soluble vitamins, minerals, enzymes, polysaccharides, phenolic compounds and organic acids. *Aloe vera* includes monosaccharides and polysaccharides. Monosaccharides contain the simple sugars which include glucose. The polysaccharides are the more complex long-chain sugars involving glucose and mannose or the gluco-mannans. These sugars are ingested whole from the stomach. Aloeride one of the polysaccharides contains glucose

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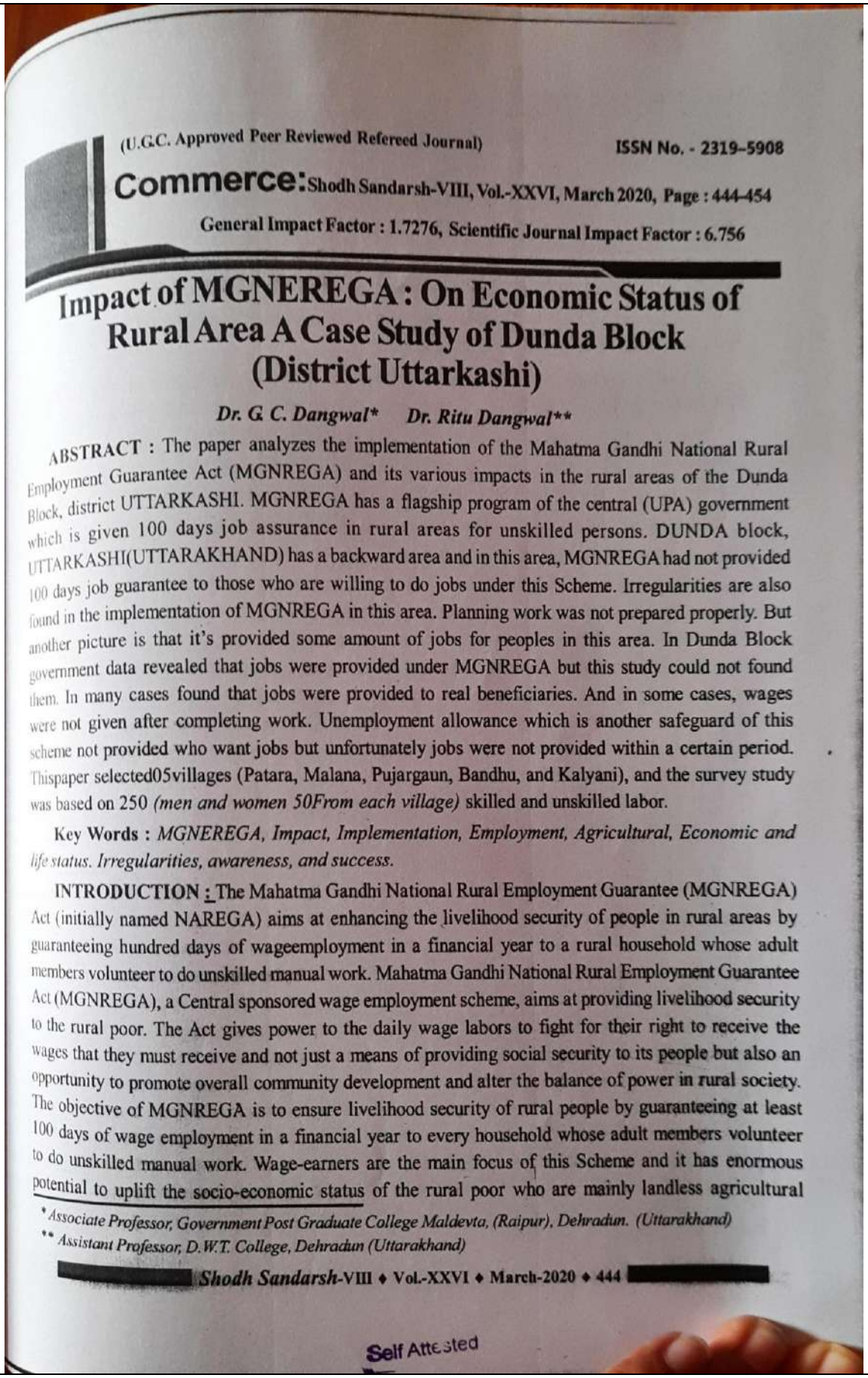
89.	Prof (Dr) G.C Dangwal	

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Impact of MGNEREGA : On Economic Status of Rural Area A Case Study of Dunda Block (District Uttarkashi)

*Dr. G. C. Dangwal** *Dr. Ritu Dangwal***

ABSTRACT : The paper analyzes the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and its various impacts in the rural areas of the Dunda Block, district UTTARKASHI. MGNREGA has a flagship program of the central (UPA) government which is given 100 days job assurance in rural areas for unskilled persons. DUNDA block, UTTARKASHI(UTTARAKHAND) has a backward area and in this area, MGNREGA had not provided 100 days job guarantee to those who are willing to do jobs under this Scheme. Irregularities are also found in the implementation of MGNREGA in this area. Planning work was not prepared properly. But another picture is that it's provided some amount of jobs for peoples in this area. In Dunda Block government data revealed that jobs were provided under MGNREGA but this study could not found them. In many cases found that jobs were provided to real beneficiaries. And in some cases, wages were not given after completing work. Unemployment allowance which is another safeguard of this scheme not provided who want jobs but unfortunately jobs were not provided within a certain period. Thispaper selected05villages (Patara, Malana, Pujargaun, Bandhu, and Kalyani), and the survey study was based on 250 *(men and women 50From each village)* skilled and unskilled labor.

Key Words : *MGNEREGA, Impact, Implementation, Employment, Agricultural, Economic and life status. Irregularities, awareness, and success.*

INTRODUCTION : The Mahatma Gandhi National Rural Employment Guarantee (MGNREGA) Act (initially named NAREGA) aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wageemployment in a financial year to a rural household whose adult members volunteer to do unskilled manual work. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), a Central sponsored wage employment scheme, aims at providing livelihood security to the rural poor. The Act gives power to the daily wage labors to fight for their right to receive the wages that they must receive and not just a means of providing social security to its people but also an opportunity to promote overall community development and alter the balance of power in rural society. The objective of MGNREGA is to ensure livelihood security of rural people by guaranteeing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. Wage-earners are the main focus of this Scheme and it has enormous potential to uplift the socio-economic status of the rural poor who are mainly landless agricultural

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Socio-Economic Profile of Entrepreneurs : a Cross Sectional Study of Situational Factors Affecting Entrepreneurial Choice

*Dr. G. C. Dangwal** *Dr. Ritu Dangwal***

Abstract : *Entrepreneur plays a vital role in the process of economic development. In real sense, he is the engine of development. Every underdeveloped society which is attempting tostart the process of economic development to findout the solution of its burning questions of poverty and unemployment, should first try to develop entrepreneurial abilitiesamong the people. If the availability of entrepreneurs is ensured, they may take care of rest of the process of economic development and the development will become a natural way of life.*

Keyword: Poverty, Unemployment, Entrepreneurship, Economic Development.

Introduction : The economic development is identified as a process of growth in national income with qualitative changes in life of the people. It is a multidimensional phenomenon which includes not only increase in monetary income of people but also improvement in standard of living, education, public health, consumption level, greater leisure and all the other social and economic factors that make for content and happy life. The development of an economy depends on its society alone. A society can be assisted by external efforts to find its way leading to development, but development can never be imposed on any society. Before the process of development start the people should be ready to accept it. Therefore the process of development requires a mental revaluation as its precondition. However, the social attitude, values and practices do not change over night. This change is initiated by a few people, the people who discover new idea, practices and technology or adopt them as available elsewhere, the people who establish, new organization, including industrial establishment, that generate income and economic opportunities along with new product. These people are the agents of development and called entrepreneurs. Schumpeter (1934) gave them prime role in his model of economic development.

The experience of development in many economies of the world suggested that as aneconomy moves in the path of economic growth, the relative share of agriculture decreases both in terms of share in national income as well as in employment generation. Industrial and service sector take dominant position in the economy. In India in 1999 about 63% of the working population was engaged in agriculture and its contribution to national income was 26% only. In Asia, Africa and middle east countries, from one third to more than four-fifth of the population earn their livelihood from agriculture and in most Latin American countries form two-third to three-fourth of population are involved in agriculture. On the other hand, proportion of population engaged in agriculture in developed countries is much lower than the proportion of population engaged in agriculture in underdeveloped countries. Therefore; when an underdeveloped economy, heavily relying on agriculture, wants to move forward in the path of economic development based on industrialization, it needs to convert, promote, create, organize and

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On Cosymplectic Manifold with H -Conformal*(Star) Curvature $\tilde{M}$

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ABSTRACT

Tokagi, H and Watanabe [1] Yano, Y. [2], Mishra, R.S. [3], Pandey [4] etc., have studiedH-Conformal*(Star) Curvature tensor$\tilde{M}$. The studies of Cosymplectic manifold with orthogonalbasis equipped with different structure have been made by Yano [2], Tokagi [1] and Mishra[3].

Here we have discussed Cosymplectic manifold M_n (n=2m+1) possessing the orthonormal basis $\{e_i, Fe_i\}$, i =1, 2, 3————2m of unit vector which are normal to the contact vector T, we have obtained the expression relating the sectional curvature and scalar curvature in H-Conformal*(Star) curvature tensor$\tilde{M}$.

Key Words: H-Conformal*(Star) Curvature tensor$\tilde{M}$,Cosymplectic manifold, orthonormal basis, almost contact metric (almost -Grayan) manifold, Sectional curvature etc.

INTRODUCTION

Let M_n , n =2m+1 be an almost contact metric (almost Grayan) manifold equipped with an almostcontact metric structure {F,T, A, g} satisfying :

(1.1) (a) $F^2X = -X + A(X)T$
(1.1)(b) $A(FT) = 0$
(1.1)(c) $FT = 0$
(1.1)(d) $A(T) = 0$
(1.2)(a) $g(\bar{X},\bar{Y}) = g(X,Y) - A(X)A(Y)$
(1.2)(b) $g(T, X) = A(X)$
(1.2)(c) $'F(X, Y) \cong g(\bar{X}, Y) = -g(X,\bar{Y}) = -'F(Y, X)$

Where
(1.2)(d) $\bar{X} \cong FX$,
For all C^∞-vector fields X, Y inM_n, here F is a structure tensor of type (1, 1), A is a 1- form, T is a contravariant vector field associated with A, g is a fundamental metric tensor and 'F is a fundamental 2- form.
Let D be a Levi - cevita or Riemannian curvature tensor in M_n . If in M_n , the structure tensor F and the contact form A are covariantly constant i.e.

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(1.3) $(D_xF)(Y) = 0$
(1.4)(a) $(D_xA)(Y) = 0$
(1.4)(b) $D_xT = 0$
Then M_n is called a Cosymplectic Manifold [2] and [3].

1.40. ORTHONORMAL BASIS IN M_n:

Let a point $X \in M_n$ $\{e_1, e_2, e_3, \text{————}e_{2m}, Fe_1, Fe_2, \text{----} Fe_{2m}\}$, be an orthonormal basis of the tangent space T in (M_n), such that

(1.40)(a) $K(e_i) = \lambda_i e_i + \mu T$
$K(Fe_i) = \lambda_i Fe_i$, for i = 1,2,3,————2m.
Where T is such that
(1.40)(b) $g(e_i, T) = 0$,
ie. T is orthogonal to e_i,for i = 1,2,3,—2m. The result in (2.1) are analogous to those in[1].

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On Cosymplectic Manifold with H-Conformal Curvature $\bar{C}$

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***Abstract*: Tokagi, H and Watanabe [1] Yano, Y. [2], Mishra, R.S. [3], Pandey [4] etc., have studied H-Conformal Curvature tensor $\bar{C}$, The studies of Cosymplectic manifold with orthogonal basis equipped with different structure have been made by Yano [2], Tokagi [1] and Mishra[3].**

Here we have discussed Cosymplectic manifold M_n (n=2m+1) possessing the orthonormal basis $\{e_i, Fe_i\}$, i=1, 2, 3————2m of unit vector which are normal to the contact vector T_i we have obtained the expression relating the sectional curvature and scalar curvature in H-Conformal $\bar{C}$ curvature tensor.

***Keywords*: Almost contact metric (almost Grayan) manifold, Cosymplectic manifold, H-Conformal Curvature tensor, Orthonormal basis, Sectional curvature.**

1. Introduction

Let M_n, n = 2m+1 be an almost contact metric (almost Grayan) manifold equipped with an almost contact metric structure,

{F, T, A, g} satisfying:

(1.1) (a) $F^2 X = -X + A(X) T$
(1.1) (b) $A(FT) = 0$
(1.1)(c) $FT = 0$
(1.1)(d) $A(T) = 0$
(1.2)(a) $g(\bar{X}, \bar{Y}) = g(X,Y) - A(X)A(Y)$
(1.2)(b) $g(T, X) = A(X)$
(1.2)(c) $'F(X, Y) \cong g(\bar{X}, Y) = -g(X, \bar{Y}) = -'F(Y, X)$

Where
(1.2)(d) $\bar{X} \cong FX$,

For all C^∞ vector fields X, Y in M_n, here F is a structure tensor of type (1, 1), A is a 1- form, T is a contravariant vector field associated with A, g is a fundamental metric tensor and 'F is a fundamental 2- form.

Let D be a Levi - cevita or Riemannian curvature tensor in M_n. If in M_n, the structure tensor F and the contact form A are covariantly constant i.e.

(1.3) $(D_x F)(Y) = 0$
(1.4)(a) $(D_x A)(Y) = 0$
(1.4)(b) $D_x T = 0$

Then M_n is called a Cosymplectic Manifold [2] and [3].

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1.40. Ortho-normal basis in M_n:

Let a point $X \in M_n$ $\{e_1, e_2, e_3, \ldots\ldots e_{2m}, Fe_1, Fe_2 \ldots\ldots Fe_{2m}\}$, be an orthonormal basis of the tangent space $T_X(M_n)$, such that

(1.40)(a) $K(e_i) = \lambda_i e_i + \mu T$
$K(Fe_i) = \lambda_i Fe_i$, for i = 1,2,3,……2m.

Where T is such that
(1.40)(b) $g(e_i, T) = 0$,
i.e. T is orthogonal to e_i, for i = 1,2,3…….2m. The result in (1.40) are analogous to those in [1].

Since in cosymplectic manifold M_n (1.3) implies
(1.41)(a) $K(X, Y, \bar{Z}) = \bar{K}(X, Y, Z)$
(1.41)(b) $Ric(Y, \bar{Z}) = Ric(\bar{Y}, Z) = -g(K(\bar{Y}), Z)$
and
(1.41)(c) $K(\bar{Y}) = K(\bar{Y})$
We know that sectional curvature k^* of M_n in the plane of the unit vector X and Y at any point $p \in M_n$ is defined by [3].
(1.42) $k^* = (K(X,Y,X,Y))/(g(X,X)g(Y,Y)-\{g(X,Y)\}^2)$
So the sectional curvature of M_n in the plane of e_i, e_j, is given by,
(1.43) $k^* = 'K(e_j, e_i, e_j, e_i)$
Since $g(e_j, e_i) = 0$, and $g(e_i, e_i) = 1$, as the e_i, e_j are mutually perpendicular.

Now H-conformal $\bar{C}$ curvature tensor is given by[1],[2],[3]
(2.00) $\bar{C}(X,Y,Z,W) \cong g(\bar{C}(X,Y,Z),W)$
$= 'K(X,Y,Z,W) - \frac{1}{(n+4)}\{Ric(Y,Z)g(X,W) - Ric(X,Z)g(Y,W)$
$+ Ric(\bar{Y},Z)'F(X,W) - Ric(\bar{X},Z)'F(Y,W) + 'F(Y,Z)Ric(\bar{X},W)$
$-'F(X,Z)Ric(\bar{Y},W) + g(Y,Z)Ric(X,W) - g(X,Z)Ric(Y,W)$
$- 2Ric(\bar{X},Y)'F(Z,W) - 2'F(X,Y)Ric(\bar{Z},W)\}$
$+\frac{k}{(n+2)(n+4)}[g(Y,Z)g(X,W) - g(X,Z)g(Y,W) + 'F(Y,Z)'F(X,W)$
$-'F(X,Z)'F(Y,W) - 2'F(X,Y)'F(Z,W)]$

Further, from equation (2.00) H-conformal $\bar{C}$ curvature tensor is given as,
(2.01) $\bar{C}(X,Y,Z) = K(X,Y,Z) - \frac{1}{(n+4)}[Ric(Y,Z)X - Ric(X,Z)Y$
$+Ric(\bar{Y},Z)\bar{X} - Ric(\bar{X},Z)\bar{Y} + K(\bar{X})g(\bar{Y},Z) - K(Y)g(X,Z) +$

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Riemannian Curvature Tensor on Trans -Sasakian Manifold

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Abstract:
Background: *Oubina, J.A.[1] defined and initiated the study of Trans-Sasakian manifolds. Blair [2] ,Prasad and Ojha [3], Hasan Shahid [4] and some other authors have studied different properties of C-R-Sub –manifolds of Trans-Sasakian manifolds. Golab, S. [5] studied the properties of semi-symmetric and Quarter symmetric connections in Riemannian manifold. Yano,K.[6] has defined contact conformal connection and studied some of its properties in a sasakian manifold. Mishra and Pandey [7] have studied the properties in Quarter symmetric metric F-connections in an almost Grayan manifold.*
Result *:In this paper we have studied Riemannian curvature tensor on Trans-Sasakian manifold. Following the patterns of Yano [6], we have proved that a Trans –Sasakian manifold admitting a killing structure vector is an (α, 0) type Trans –Sasakian manifold. Further we have proved that a Trans –Sasakian manifold with structure 1-form A is closed,becomes (β,0) type Trans –Sasakian manifold.*
Conclusion: *Trans –Sasakian manifold admitting a killing structure vector is an (α, 0) type Trans –Sasakian manifold. And a Trans –Sasakian manifold with structure 1-form A is closed ,becomes (β,0) type Trans – Sasakian manifold.*

Key words: *Riemannian curvature tensor, Trans-Sasakian manifold,C-R-Sub –manifolds of Trans-Sasakian manifolds,semi-symmetric and Quarter symmetric connections in Riemannian manifold, almost Grayan manifold.*

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I. Introduction

Let M_n (n = 2m + 1) be an almost contact metric manifold endowed with a (1,1)-type structure tensor F, a contravariant vector field T, a -1 form A associated with T and a metric tensor 'g' satisfying :---

(1.1)(a) $F^2X = -X + A(X)T$
(1.1)(b) $FT = 0$
(1.1)(c) $A(FX) = 0$
(1.1)(d) $A(T) = 1$
and
(1.2)(a) $g(\underline{X},\underline{Y}) = g(X, Y) - A(X)A(Y)$
Where
(1.2)(b) $\underline{X} \cong FX$
And
(1.2)(c) $g(T, X) \cong A(X)$

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For all C^∞- vector fields X,Y in M_n also , a fundamental 2-form 'F in M_n is defined as
(1.3) $'F(X,Y) = g(\underline{X},Y) = -g(X,\underline{Y}) = -'F(Y,X)$
Then, we call the structure bundle {F,T,A,g}an almost contact-metric structure [1]
An almost contact metric structure is called normal [1], if
(1.4)(a) $(dA)(X,Y)T + N(X,Y) = 0$
Where
(1.4)(b) $(dA)(X,Y) = (D_XA)(Y) - (D_YA)(X)$, D is the Riemannian connection in M_n .
And
(1.5) $N(X,Y) = (D_{\underline{X}}F)(Y) - (D_{\underline{Y}}F)(X) - \underline{(D_XF)(Y)} + \underline{(D_YF)(X)}$
Is Nijenhemus tensor in M_n .
An almost contact metric manifold M_n with structure bundle {F,T,A,g} is called a Trans-Sasakian manifold [3]&[1],if
(1.6) $(D_XF)(Y) = \alpha\{g(X,Y)T - A(Y)X\} + \beta\{'F(X,Y)T - A(Y)\underline{X}\}$
Where α , β are non -zero constants.
Itcan be easily seen that a Trans-Sasakian manifold is normal. In view of (1.6) one can easily obtain in M_n , the relations

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DISASTER MANAGEMENT IN UTTARAKHAND- A CASE STUDY

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Abstract-

Uttarakhand is a Himalayan state which is prone to various manmade and natural disasters. Disaster has harmful impact on both society and humankind as it causes negative impact on physical as well as mental health of the people. Hilly areas are more vulnerable to disasters, lacks adequate facilities and infrastructure due to its remote location. The paper addresses types of disaster in the state along with the efforts of state Government to tackle the disasters. The paper also discussed existing infrastructure and technique used by state government for disaster management. This case study recommends several steps to be taken for disaster management, how to use technology as preventive methodology, how to spread awareness among the local people?

Keywords: Himalayan, Uttarakhand, Vulnerability, Disaster, Mitigation

Introduction-

Uttarakhand located in the northern part of the country and is primarily situated on the southern gradient of the Himalayas. Total area of state is around 53484 km² andGeographically, Uttarakhand has around 64 per cent area is covered by the forest and 93 per cent area is occupied by the mountain **(Chopra, R. 2014)**. Glaciers in the state are situated in the highest level and dense forests at the lower elevations. The Western part of Himalayan region which is situated in the height 3000-3500 meters is covered with Alpine Shrub and Meadows **(farmech.gov.in)**. Geologically, the Himalayan region of Uttarakhand is subdivided into Trans Himalayas, Higher Himalayas, Lower Himalayas, Shavlik Himalayas, *Bhavar&Tarai***(Chopra, R. 2014)**. Though the climatic situation of the Tarai areas is very similar to the other Tarai region of other part of country but the mountainous region has mild summers, colder winters, which is often accompanied with the snowfall for longer duration and monsoon has high rainfall. Pristine natural beauty along with favourable climatic conditions makes Uttarakhand as a most preferred tourist destination. Huge disparities in the geographical location and being an origin destination of several important rivers has impact on the climate, vegetation within the state and it has also made state vulnerable to several disasters.

Fragile geographical location, difficult terrain makes state prone to several disasters like earthquake, landslides, floods, epidemics, forest fire, hailstorm, lightening, road accidents. Along with this the state is highly susceptible to numerous hazards like flash -floods, avalanches, dam burst, drought but as the state is categorized in the highest seismic risk zones of the country i.e. Zone V and IV, thus it is state higher risk for reoccurrence of Earthquake**(Rautela, P. and *et. al.*,2015)**.

State has formulated Uttarakhand State Disaster Management Authority (USDMA) and State Emergency Operations Centre (SEOC), through which the monitoring of work related to disaster is done. State Disaster Relief

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Article-46

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Spider diversity and distribution in Doon Valley, Uttarakhand and tracking climate change through spider as bio-indicator in Garhwal Himalaya

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ABSTRACT

The Himalayan range is home to great number of flora and fauna in northern India. In this study, we have summarized the known diversity of spiders in Uttarakhand. Further, spider's diversity in Doon Valley is being studied on the basis of altitudinal variation and correlated with the changes in the climate. The altitudinal gradient of Garhwal Himalayan region encompasses various habitats and eco-zones. Bio-indicator species inhabiting these zones are very sensitive to climatic changes and it is well accepted that these species are among the first individuals that are affected by even the slight changes in climatic patterns. Along with this, the study also focuses on the conservation of spider bio-diversity. Keeping in mind the importance of spider in the ecosystem adatabase of DNA bar-coding for spiders of Uttarakhand is also being developed to identify cryptic species. The molecular data will also provide information about evolutionary history and phylogenetic relationships of spiders. The present study would be among first attempts to barcode the spider species of Uttarakhandand study their population diversity and develop data on selective spider species being used as bio-indicators.

Key words : Spider, Conservation, Ecological monitoring, Altitudinal gradient, Bio-indicator

Introduction

In Arthropods, arachnids are a less studied group, but they play an important role in regulating smaller invertebrate's population in an ecosystem (Riechert, 1974). Spiders are excellent predators, and their preying feature has proved to be helpful to men in agro-ecosystem. They suppress the abundant number of the pest in field and vegetation by preying on them and thus protecting the plantation (Sharma, 2014). They act as natural pest control to the crop, eating away small pests which destroy the crop. Spider in the home or nearby also acts as disease controller, as they prey on various disease-spreading insects, mosquitoes, flies, cockroaches etc. controlling the spread of disease by limiting their population (King and Hardy, 2013). Spiders by themselves control their own population too, as large spiders eat away small spiders and female spiders from few species eat male spiders of the same species, and vice-versa, thus they maintain the population of their own kind (Andrade, 1998). Their average populations vary from 50-150 individual per square meter, but can also reach up to 1000 individual per square meter annually. They are present in abundance in both natural and cultivated environment. They are one of the dominant terrestrial micro-invertebrate predators. Due to their

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Article-9

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Prospects of Medicinal and Aromatic Plants Commercial Farming in District Uttarkashi, Uttarakhand, India.

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ABSTRACT

Himalayan region of Uttarakhand state of India has been well known to be a treasure trove of medicinal plants. Uttarkashi district (30°732N 78°452E) of Uttarakhand is rich in medicinal plants and several studies/ surveys have been carried out enlisting medicinal, aromatic and Nutraceutical plants. These include medicinal plants Kutki (*Picrorhiza kurroa* Royle), Vajradanti (*Barleria prionitis*), Archu (*Rheum emondi* Wall.), Atis (*Aconitum heterophyllum*), Kaudi (*Gentiana kurroo* Royle), Salam Panja or Hath Panja (*Dactylorhiza hatagirea*) etc., but it is almost difficult to quote any commercial level cultivation especially in remote mountain regions. During our 10 years of visiting these remote areas like Harsil, Dhontri, Chaurangi Khal, Bhatwari, by us, we became aware that the locals do have all the traditional knowledge but still are weary of taking up the commercial level mainly because of marketing. Not only medicinal plant, the entire district has huge potential for commercial cultivation of aromatic plants (like Demask Rose and Lemon Grass). As of today, several companies procure the raw material from the locals, then process it and again sell it back to the same region at much higher price. Even in case of procurement, it should be necessary to implement the access benefit sharing mechanism as per biodiversity act of 2002because all these years the companies who have used locals to collect huge quantities of medicinal plants for a dirt cheap price have never made any contribution towards the local communities. It is thus necessary to initiate a thought process of development of products in area where the raw material is produced which will provide the much needed economic benefits and employment to locals in rural areas. This would also be one of important steps to initiate reverse massive migration that we are witnessing from the mountain regions of Uttarakhand. It is hence important to first develop awareness, sensitize locals and develop a marketing system. This will lead to huge impact on commercial farming of medicinal/aromatic plants in this remote region.

Key words: Medicinal, Aromatic, Plants, Uttarkashi, Indian, sustainable development

Introduction

Uttarakhand state was initially a part of Uttar Pradesh (UP). Since its geographical condition were unique, initially UP created a Hill Council because the hilly region of UP had a unique geographical terrain and with diverse challenges and the pace of development was not as expected. A demand for separate state started growing among the locals, this demand was met and a new state of Uttarakhand was createdon 9 November, 2000. The state of Uttarakhand thus created had 13 districts. These 13

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Article-14

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A review on role of medicinal plants-based remedies in fish pathology

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ABSTRACT

India has slowly and steadily increased both marine and freshwater fish production. The commercial aquaculture industry has to face problem of fish pathogens as fishes have to face various microorganisms that are present in water environment. These fish pathogens can causes either partial or complete fish loss and these pathogens have become a primary concern for the production of sustainable agriculture, thereby influencing the socioeconomic status of fisheries. Various stress factors like water quality, temperature changes, immune suppression, high density population, feeding habits etc. also cause loss of fish production. Aquaculture industry incurs increased expenditure on use of chemicals that are used to preventive different fish diseases. Conventiorially, treatment of fishes is still done using various salts like potassium permanganate and formalin. Alternatives to various drugs are being explored in various fields. Medicinal plants have been used for the treatment of human diseases since ages and Ayurveda has been traced back to 6000BC but information regarding the use of medicinal plants or phyto-components to treat pathogenic conditions in fishes is rather limited. This review focuses on treatment of bacterial, viral and parasitic diseases in fishes using medicinal plants and phyto-components. This knowledge can help in treating different pathological conditions in fishes with local resources and at a faster rate and could prevent losses of aquaculture industry.

Key words: Medicinal plants, Fish disease, Plant extract, Fish farming.

Introduction

In developing countries, aquaculture plays an important role in providing source of income, food security and livelihood (FAO, 2016) but disease occurrence is a crucial factor affecting production of food and cause great economic loss in fishes (Lafferty, 2015). The increase of pathogen in aquaculture led to the usage of various chemicals like insecticides, anti-parasitic etc. (Kaiser, 2011; Reverter, 2014). These chemical residues in water may affects the environment [Carey, 2015; Boyd, 2015), mainly in open water where the chemicals are not controlled easily (Noga, 2010) and also affects the non-target organisms (Pillay, 2004). Alternatively, natural products are preferred because they are biodegradable in nature (Rahuman, 2011).

For the prevention of these economic losses in fish numerous remedies are used for treatment. These medications are administered through different modes like feed, bath or injections (Rico, 2013). Medicinal plants and phyto-components can be used as alternative which replaces the antibiotics/ drugs. The treatment through medicinal plants in human is a traditional approach but our knowledge is rather limited in use of medicinal plants to treat various pathological conditions in fishes. (Ahilan, 2010). Medicinal plants are rich source of bioactive compounds and thus serve as crucial raw material for the production of drug and may act as immune-

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Assessing impact of dams on genetic diversity of native fish *Mastacembelus armatus* in river Yamuna using mitochondrial DNA cytochrome-b sequences as a molecular marker

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Abstract

Several dams have been constructed in Uttarakhand. In the present study an investigation on impact of dams on genetic diversity of native fish species *Mastacembelus armatus* at the Asan barrage on river Yamuna near Vikasnagar, Uttarakhand in India was done. Partial sequence of mitochondrial Cytochrome-b (Cyto-b) gene was used to determine the genetic variation in the population of *Mastacembelus armatus*. DNA was extracted from *Mastacembelus armatus* (n=33) samples, collected from river Yamuna and its tributary Asan from fin and fishes were released back in their habitat. Cytochrome c oxidase I (COI) was used to ascertain the species of fish along with morphometric characters. Analysis of 324 bp mtDNA fragment of Cyto-b revealed the presence of 06 haplotypes with nucleotide diversity, value ranged from 0.0172 to 0.0021 low pair wise Fst value was observed negative (-0.00125) when compared between Asan barrage and Kalsi site. No genetic subdivisions between the population were found after or before the dam sites. Tajima's D value for river Asan, site Al Mirzapur (before dam) was -0.1167 (a negative value). Negative Tajima D value can be indicative of recent selective sweep or population expansion after a recent bottleneck and linkage to a swept gene. Our data shows that fragmentation of habitat by dams does not have any impact on the genetic diversity of non-migrating *Mastacembelus armatus* fish species.

Keywords: *Anthropogenic activity, COI, Cyto-b, Garhwal Himalaya, Mastacembelus armatus*

Introduction

Fragmentation of river systems by dams is increasing every day because of human needs. Dam related anthropogenic activities are severe but underappreciated threat to aquatic biodiversity (Araújo *et al.* 2018). Because of time lag and interactions with other factors (e.g. climate change), impacts of aquatic habitat fragmentation on aquatic ecosystems are not visible immediately, and therefore these impacts are underestimated. Managing freshwater biodiversity thus requires deliberate management of aquatic habitat fragmentation (Mantel *et al.* 2017). Studies of aquatic habitat fragmentation in river networks assume importance and these studies advance our general understanding of ecological fragmentation.

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Effects of river fragmentation due to various reasons are well known on migratory fishes (Brown *et al.*, 2013; Leeuwen *et al.* 2018). Sometimes, naturally occurring waterfalls also impact the geographic distributions of aquatic species. Anthropogenic activity like damming, road building, water withdrawal, Hydro Electric Power (HEP) project divided aquatic habitats of rivers into smaller patches. Human actions influence almost every aquatic ecosystem across the globe and only a few rivers remain untouched (Benke, 1990). In some cases it has been so severe that even the dams had to be removed or alternative measures like fish ladders were made mandatory. At some places anthropogenic fragmentation is developing rapidly and this rapid pace sometimes does not provide enough time to aquatic species to adjust and evolve alongside thus affecting the rich biodiversity that is harbored within freshwater ecosystems (Fischer & Lindenmayer, 2007). Changes in aquatic habitat also result in alteration in aquatic communities like macro invertebrates and aquatic flora that occur in the channel of natural rivers. Aquatic flora and

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GENETIC STRUCTURE OF NATURAL POPULATIONS OF *SCHIZOTHORAX RICHARDSONII* (GRAY 1983) IN GARHWAL HIMALAYA INFERRED FROM MITOCHONDRIAL DNA MARKER ATPASE 6/8

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ABSTRACT : ***Schizothorax richardsonii*** **(Asla) is among the most abundant fishes in waters of rivers in Garhwal Himalaya region and it is considered as vulnerable species as per IUCN. Genetic divergence of this *Schizothorax* species was assessed using 842 bp fragment of mitochondrial ATP synthase 6 & 8 (ATPase 6/8) genes. Samples of *Schizothorax richardsonii* were collected from four geographically isolated locations on River Ganges and Yamuna *viz* Bhatwari, Chinyalisaur, Poanta sahib and Barkot. Sequence analysis revealed a total of 13 haplotypes in ATPase 6/8 gene with haplotype diversity (Hd) of 0.89493 and nucleotide diversity (π) of 0.00405 across four populations of river Ganges and Yamuna. The estimated haplotype and nucleotide diversity was high in Chinyalisaur population (hd = 1.00000, π = 0.00649). Haplotype diversity (Hd) was found in the range of 0.3333 (Poanta Sahib)–1.0000(Chinyalisaur). Similarly, nucleotide diversity (π) varied from 0.00040 (Poanta Sahib) – 0.00649(Chinyalisaur). AMOVA results indicated a high total variance of 90.48 % within population than among population difference of 9.52%. Population structuring was revealed by high and significant Fst value of 0.09521. The Fst value of 0.09521 (P<0.001) of the total population was found significant. The result concluded that the polymorphism in ATPase 6/8 is a potential marker and is important for determining genetic variation of *Schizothorax richardsonii* which will play a key role in conservation and management of this vulnerable fish species.**

Key words : ATPase6/8, anthropogenic activity, Garhwal Himalaya, genetic variation, *Schizothorax richardsonii*.

INTRODUCTION

Garhwal Himalaya offers a unique habitat and provides a good opportunity to study genetic variability of species specially the fishes. The region of Garhwal in Uttarakhand, India, is drained by two major rivers i.e. the Ganges (also known as Bhagirathi) and the Yamuna. Both these rivers originate in district Uttarkashi of Uttarakhand and they have several tributaries. River Ganges originates at 'Gaumukh' glacier at the height of 4255 meters (above mean sea level) while river Yamuna originates from Yamunotri Glacier in Uttarkashi district of Garhwal region in Uttarakhand. There are several fish species in these fresh water system and many of them are endemic to this region. More importantly, these fish species have dwelled in this geographically isolated aquatic habitat since long.

The iconic Schizothorax species (Gray 1983) is one of the most abundant fish found in a native of the trans-Himalayan region. This species is found in waters of almost entire Himalayan region and is used extensively as a food fish. With specific reference to Garhwal region of Himalaya, the freshwater systems have witnessed severe anthropogenic activity and as per the IUCN red data book, this species was listed as vulnerable as per 2010 assessment (Vishwanath, 2010). As this species must have survived since the time of formation of Himalaya and has evolved with nature it is important to genetic variability and stock structure of different population of Schizothorax species that have been in isolated geographical location in Garhwal Himalayan region. The evolutionary changes can be studies using molecular tools and mitochondrial DNA is usually used for these studies because of absence of introns and the mutation rate in mtDNA is much more frequent than that of nuclear genes (Andalib *et al*, 2017). This faster evolutionary rate, tends to enhance recent demographic events and maternal inheritance make mitochondrial DNA a potential genetic marker for analyzing intraspecific variability as well as phylogenetic studies (William *et al*, 2005). In addition,

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ELECTRONIC DETOXIFICATION WITH YOGA AND MEDITATION

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ABSTRACT: Technology has become almost an integral part of our lives. The development and use of modern gadgets has also increased with the technological advancement. Technology and electronic gadgets have become near indispensable in our daily lives and almost everyone is addicted to these. Today's youth are putting technology to varied use, from texting, tweeting, chatting, online gaming, social media etc. The high dependency and unregulated use of electronic gadgets has led to serious health (mental and physical) implications. Yoga and meditation have proved to be effective practices to mitigate these health implications and find recommendation as therapeutic intervention not only in India but worldwide. This paper discusses the adverse health implications of unregulated overuse of electronic devices and the solutions offered by the Yoga to mitigate these through electronic detoxification. This article is of special significance to academia especially adolescent school going children since they comprise most vulnerable target group. Various health complications, addiction to electronic gadgets, can lead to and yoga postures to handle these have been discussed.

Keywords: Yoga, Electronic Gadgets, Electronic detoxification

I. INTRODUCTION

We cannot imagine our lives without modern gadgets and gizmos like mobiles, computers, tablets, i-Pad, radio, music systems and video games etc. Getting engulfed by the digital environment has become integral to life. A Nielsen study indicates that an American youth spends more than 10 hours with electronic gadgets each day. Another study conducted by the organization Common Sense Media, reported that 50% of teens feel addicted to their mobile devices. Available research also tells that while people can't imagine life without their digital tools, unregulated and overuse of technology can also contribute to stress. Excessive and prolonged use of these equipment finds manifestation in the form of deleterious health effects. A Swedish study found that heavy use of technology was linked to insomnia, depression, increased stress, and mood swings. The findings also indicated that using mobile in bed at night leads to anxiety, insomnia, and duration and quality of sleep. A study associated heavy technology use with mental health issues among adolescents and increased symptoms of ADH. A research from the University of Pennsylvania has also revealed that a correlation between time spent on social media, loneliness and depression, and that constant connectivity affects work-life balance. Another study published in the Journal of Applied Research also found that technology use affects work-life balance, job satisfaction, job stress.

Various technological advancements for lessening the deleterious effect of electronic devices are popular in market like Electro Magnetic Field [EMF] shielding device, Shungite necklace, screen filters, blue light blocking plugin etc [1]. Digital detoxification is another way to mitigate these complications and to establish a healthier life style. Digital detox would involve predefined abstinence or setting limits to the use of digital devices and social media connections. Another natural and most effective ways of electronic detoxification [EDfx] is Yoga and Meditation. Yoga has now acquired global acceptance and is used therapeutically to improve human health not only in India but also in other countries. It has been found to enhance focus, clarity, memory and concentration, and helps in achieving heightened state of awareness of body and mind.

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Applied Innovative Research
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Density, viscosity and ultrasonic study of polymethylmethacrylate

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Experimental values of density, viscosity and ultrasonic velocity of binary mixture of polymethylmethacrylate and acetic acid are reported in temperature range 30 °C to 65 °C at 0.4% concentration at1MHz frequency. Acoustical parameters like relaxation time and ultrasonic absorption are calculated using experimental data. These properties are used to interpret molecular interactions among component liquids.

Keywords: Ultrasonic velocity, Relaxation time, Ultrasonic absorption

1 Introduction

In recent years, the measurement and interpretation of ultrasonic properties of liquid and liquid mixtures have been studied[1, 2]. The study of molecular interaction in polymer solution is of great importance for engineering applications of polymers. They also provide substantial information on the processes involving polymer production and their uses[3, 4]. Ultrasonic[5, 6] volumetric[7] and viscometric[8, 9] properties of binary liquid mixtures have been investigated by a number of researchers over the past several years. The ultrasonic technique is a powerful and effective tool for investigation of polymer solutions and behavior of polymer chain in an ultrasonic field. These properties are useful for device application such as ultrasound tranducer, nonvolatile memory, sensor, actuator, sonar instruments and solar cell. Polymer dissolution also plays a key role in many industrial applications in a variety of areas and an understanding of the dissolution process allows for the optimization of design and processing conditions as well as selection of suitable solvent[10]. B Dalai *et. al.*[11] have observed experimental value of density, viscosity and ultrasonic velocity of binary liquid mixtures of a nuclear extractant with monocarboxylic acids at 303.15 K temperature. Very few literatures are available on binary mixture of polymethylmethacrylate.

2 Experimental Detail

In the present investigation liquid solution of polymethylmethacrylate (of molecular weight ≈15,000 in solid form) with acetic acid is used. The solutions were prepared by adding known weight of polymethylmethacrylate to fixed volume of acetic acid and stirring under reflex, until a clear solution was obtained. The concentration studied in the solution is 0.4 % (w/v). Different acoustical parameters like relaxation time and ultrasonic absorption were calculated at different temperature and at 0.4 % concentration at 1MHz. The ultrasonic speeds were measured by using variable path ultrasonic interferometer with reproducibility of ±0.4m/s at 35 °C. The temperature of the solution has been kept constant by circulating water from the thermostatically controlled (±0.1°C) water bath. The densities at different temperature were measured using10 ml specific gravity bottle and single pan microbalance. The uncertainty in density measurements was found to be about 0.5 kg/m3. The viscosity of the mixtures was determined by using Ostwald's viscometer, which was kept inside a double walled jacket, in which water from thermostat water bath was circulated. Inner cylinder of this double-wall-glass jacket was filled with water of desired temperature so as to establish and maintain the thermal equilibrium. The accuracy in the viscosity measurements is within ±0.5 %. These parameters are calculated by using standard relations[12-14].

3 Results and Discussion

Densities, viscosities and ultrasonic velocities of polymethylmethacrylate are shown in Tables 1-3 and Figs 1-3, respectively. Table 1 and Fig. 1 represent the variation of density of polymethylmethacrylate

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Ultrasonic study of polyvinyl butyral

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The Ultrasonic behavior of polyvinyl butyral has been studied in the solvent acetic acid at different temperatures in the range 35-45 °C. Acoustical and other related parameters like ultrasonic velocity, adiabatic compressibility, acoustic impedance, relaxation time etc., have been computed from the experimentally measured density and viscosity data. The results of these parameters are attributed to intermolecular interactions between solute and solvent.

Keywords: Ultrasonic velocity, Adiabatic compressibility, Acoustic impedance, Relaxation time.

1 Introduction

Ultrasonic velocity and derived ultrasonic parameters are of considerable interest in understanding the nature and strength of various intermolecular interactions. Such studies have been found to provide information regarding the intermolecular processes[1-2]. Ultrasonic measurement can be used as powerful probe to study the structural, physical and chemical properties of matter. The ultrasonic velocity is one of those physical properties that helps in understanding the nature of liquid state. Ultrasonic velocity together with density and viscosity data furnish a wealth of information about the sum total of interactions between ions, dipoles, H-bonding, multipolar and dispersion forces[3-6].

The extensive use of polymeric materials in technology have prompted ultrasonic studies to help to understand the structures of polymers and molecular interactions in solutions and nature of polymers[7-8]. The properties of polymer solution depend on the nature and size of the polymer chains and also on the interaction between polymer and solvent molecule.

2 Experimental Details

Solutions of polyvinyl butyral of different concentration were prepared by adding known weight of polyvinyl butyral to a fixed volume of solvent (acetic acid) and then stirring under reflex until a clear solution was obtained. The concentration range studied in the solution at which the present investigation is carried out is 0.5% & 1.0 (m/v) respectively. Ultrasonic velocities in the polymer solutions were measured by using ultrasonic interferometer at a frequency of 1MHz and at the temperatures 35 °C, 40 °C, 45 °C at above said concentration. The accuracy of ultrasonic velocity determination in the solution is 0.001%. The temperature of the measuring cell was maintained constant by circulating water from a thermostatically controlled water bath with an accuracy of ±0.1 °C. The densities of the solutions were measured to an accuracy of ±3 parts in 10^3 using a specific gravity bottle of 10 ml at different temperatures. The viscosities of the polymer solutions were measured to an accuracy of 1%, using an ostwald's viscometer at above said range of temperature by immersing the viscometer in the thermostatically controlled water bath. The viscometer was already calibrated with a standard liquid. Single pan macro balance with an accuracy of 0.001gm has been employed for mass measurements. Using the measured values of ultrasonic velocity, density and viscosity of the solutions for concentration range 0.5% -1.0 % at various temperatures, the related ultrasonic parameters are calculated and presented in tables and figures. Ultrasonic parameters are computed by using the following standard relations[9-13].

(i) Ultrasonic velocity $V = \lambda f$

(ii) Adiabatic compressibility $\beta = \frac{1}{v^2 \rho}$

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Research Article

AMELIORATIVE ROLE OF VITAMIN E AGAINST HEXAVALENT CHROMIUM INDUCED HEPATO–NEPHROTOXICITY IN LABORATORY CHICKS: A HISTOPATHOLOGICAL STUDY

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ABSTRACT

Chromium is a widespread environmental waste. It is an industrial contaminant with teratogenic, mutagenic and carcinogenic effects on animals and human. Present study was carried out to evaluate the potential protective effect of vitamin E on the hepatotoxicity and nephrotoxicity generated by potassium dichromate ($K_2Cr_2O_7$) in laboratory chicks. The histopathological evaluation of liver and kidney showed severe changes in chicks treated with $K_2Cr_2O_7$. Liver of the $K_2Cr_2O_7$ treated group showed major histological alterations, such as necrosis of hepatocytes, dilatation of sinusoids with congestion of blood vessels and hemorrhage. In chromium intoxicated chicks, congestion and hemorrhages in renal tissues, hemorrhages in kidney parenchyma, glomeruli segmentation and swelling of glomeruli with infiltration of leucocytes (Glomerulitis) were seen. Administration of vitamin E protects the liver and kidney damaged by $K_2Cr_2O_7$ as evidenced by appearance of normal histological structures, although hemorrhage was also noticed. Vitamin E treatment showed significant improvement in the histopathological picture. It could be concluded that potassium dichromate is potent hepatotoxic and nephrotoxic. Vitamin E has a potential protective effect to reverse the toxicity of $K_2Cr_2O_7$ and has the ability to improve the hepatic and renal tissue damage associated with $K_2Cr_2O_7$ intoxication.

Keywords: Chromium, Hepatotoxicity, Nephrotoxicity, Vitamin E, Intoxication

1. INTRODUCTION

Chromium (Cr) is a naturally occurring heavy metal commonly found in the environment in two valence states: trivalent Cr(III) and hexavalent Cr(VI). It is widely used in numerous industrial processes, and thus is a contaminant of many environmental systems [1]. It is commonly used in various industries (e.g., steel, alloy, cast iron, chrome plating, paints, leather tanning, photography, and metal finishes). However, Cr(VI) compounds have been reported to be more toxic and carcinogenic than those of Cr(III) because the former can pass through cell membranes more easily than the latter [2].

Once inside the cell, Cr(VI) is reduced to its lower oxidation states, Cr(V) and Cr(IV), and then to Cr(III) by low-molecular weight molecules, enzymatic reductants, and non-enzymatic reductants [3]. These reactive chromium intermediates are capable of generating a whole spectrum of reactive oxygen species (ROS), which is an important characteristic of Cr(VI) metabolism [4]. An excessive quantity of ROS that is generated by these reactions can cause injury to cellular proteins, lipids, and DNA, leading to a state known as oxidative stress [5-7]. Therefore, one of the most important damages caused by extraneous Cr(VI) is the massive ROS production during Cr(VI) reduction in the cell.

However, the liver is the major organ responsible for metabolism, detoxification, and secretary functions in the body. Hence, it regulates various important metabolic functions in mammalian systems [8]. However, Cr(VI) has been reported to cause hepato - nephrotoxicity in humans and laboratory animals primarily through an oxidative stress-mediated mechanism [6, 8, 9]. Considering the high sensitivity of the liver to Cr(VI) related insult, preventive intervention is a major concern. Heavy metals are nephrotoxic and xenobiotic that may lead to acute tubular necrosis, loss of brush border [10,11] .The hexavalent chromium compounds are carcinogens, corrosives, delayed contact sensitizers the kidney as a primary target organ [12].

Vitamin E is an important component in human diet and considered the most effective liposoluble antioxidant found in the biological system. It is composed of various subfamilies of which tocopherols and tocotrienols are the most studied.

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Global Journal for Pharma and Allied Sciences

Research Article

QUICK RESPONSE CODE

Role of Dietary Antioxidants in Detoxication of Hexavalent Chromium Toxicity in Albino Rats

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ABSTRACT

Antioxidative protection offered by three nutrients viz: α-tocopherol (vitamin E), reduced glutathione (GSH) and selenium (Se) against hexavalent chromium {Cr(VI)} toxicity has been studied in laboratory rats. Chromium like other transition metal ions induced oxidative stress in liver and kidney. However, treatments with antioxidants inhibited lipid peroxidation and activated serum transminases and glutathione -S-transferases activity in both the organs. Selective preferences were shown by these antioxidants for these parameters in each organs. Our results confirm that antioxidants offer protection by different mechanisms. Disturbances in cellular equilibrium of anti and pro-oxidants caused by chromium can be overcome by antioxidants with certain preferences.

Keywords: Cr(VI), Oxidative stress, Antioxidants, Liver and Kidney.

INTRODUCTION

Chromium is a toxic heavy metal, which primarily exists in two inorganic forms, Cr(VI) and Cr(III). Highly soluble Cr(VI) is carcinogenic due to its oxidizing nature. Current concept about Cr(VI) toxicity implicate the formation of reduced oxygen metabolites such as the superoxide radicals ($O_2^{\bullet-}$), hydrogen peroxide (H_2O_2) and the hydroxyl radicals ($OH^{\bullet}$) as mechanisms producing cell damage the so called "oxidative stress". Antioxidants are molecules which can safely interact with Free Radicals (FR) and the terminate the chain reaction before vital molecules are damaged. Although, there are several enzyme system within the body that scavenge FR, The principal micronutrient antioxidants which have been used in this study are α-tocopherol, selenium and GSH. The body cannot manufacture these micronutrients so they must be supplied in the diet.

Like other xenobiotics, heavy metals are potent inducers of oxidative stress[1]. Several reports[2-4] suggest that elements such as iron, copper, cadmium, lead, mercury, nickel and vanadium have the ability to generate Reactive Oxygen Species (ROS) that induce lipid peroxidation (LP), causes DNA damage, deplete sulphydryls and alter calcium homeostasis.

Further, a large body of experimental evidence suggests that oxidative tissue damage does depend on the antioxidative status of the cell and tissue. The involvement of oxidative mechanisms in chromate induced mutagenic and carcinogenic processes has also been suggested[5,6]. However, the protective influence of antioxidants on chromate induced oxidative disturbances is not well known. Therefore, a study on the effects of three antioxidants viz: glutathione (GSH), α-tocopherol and selenium in chromium treated were undertaken.

MATERIALS AND METHODS

Chemicals

Glutathione (GSH), α-tocopherol, NADP, NADH, thiobarbituric acid, 5-5 dithiobis (2-nitrobenzoic acid), 1,1,3 tetramethoxypropane and 1 chloro, 2-4 dinitrobenzene were purchased from Sigma Chemical Co. (St. Louis Mo, USA). Potassium dichromate and sodium selenite were procured from Glaxo (India). P-dimethyl-aminobenzaldehyde was supplied by SISCO Research Laboratory (Mumbai, India). Kits for the estimation of serum transminases (AST and ALT) were procured from Span Diagnostics Private Limited (Surat, India). All other reagents and chemicals used in this study were either of analytical grade or highest purity.

Animal Procedure

Four months old Wistar strain rats (150 ± 10 gm) were obtained from Central Animal Facility of All India Institute

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Review Article

Beneficial Effect of *Ajuga bracteosa* with Special Reference to Immunomodulatory Effect: An Overview

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ABSTRACT

Bisht R, Verma M, Sarah R and Kumar D (2020). Beneficial Effect of *Ajuga bracteosa* with Special Reference to Immunomodulatory Effect: An Overview. *Journal of Immunology Immunopathology*, **22(1)**: 83-91.

The therapeutic use of traditional medicine is gaining currency in the treatment of a variety of ailments. The untapped potential of many plants is yet to be explored as a source of medicine. The genus *Ajuga* has enormous medicinal and economic importance. There are almost 300 species of *Ajuga* notably; *Ajuga bracteosa* is an important medicinal plant that has many therapeutic properties as anti-microbial, anti-tumour, anti-plasmodial, antipyretic, anti-helminthic, anti-malarial, anti-inflammatory, hepatoprotective, immunomodulatory, cytotoxic and insect antifeedant. So far many active principles have been isolated from *A. bracteosa* such as neo-clerodane diterpenoids, flavonol glycosides, iridoid glycosides, ergosterol-5,8-endoperoxide and phytoecdysones. The present review aims to highlight the immunomodulatory role of *A. bracteosa* besides their other pharmacological roles.

Keywords: *Ajuga bracteosa*, hepatoprotective, immunomodulatory, cytotoxic, flavonol

INTRODUCTION

The plants influence the human and animals in many ways in addition to serve as a primary source of food for animals. They possess many medicinal compounds and preserve cultural heritages, biological information and indigenous knowledge (Hameed *et al.*, 2011; Dhama *et al.*, 2015). Since ancient times, the people immensely rely on the plants for treating various ailments. Regardless of great advancement in modern medicine, the people are still dependent on plants for their health concern as they are harmless and safe to use. Hence, the demand for plant-based medicines, health products, pharmaceuticals, cosmetics, etc. Is high throughout the world (Upadhyay *et al.*, 2012; Dhama *et al.*, 2015).

The World Health Organization (WHO) estimates that about 4 billion people approximately 80% of the world population use herbal medicine for their primary health care and the WHO notes that 74% of plant-derived pharmaceutical compounds are used in modern medicine. India is in commendable

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कोविड–19 का समाज के लोगों की जीवन शैली, धारणा और व्यवहार पर प्रभाव

डॉ0 सरिता तिवारी
असिस्टेण्ट प्रोफेसर, राजनीति शास्त्र विभाग
राजकीय स्नातकोत्तर महाविद्यालय रायपुर,देहरादून

सार

वर्तमान समय में कोविड–19 महामारी ने किस तरह से हमारी मान्यताओं,रहन–सहन और व्यवहार को प्रभावित किया है, इसी की खोज प्रस्तुत आलेख में की गई है। सामाजिक दूरी का पालन,सामाजिक समारोहों से दूरी,समाज में कई प्रकार के दबाव को झेलते हुए लोग, विभिन्न प्रकार के दिखावे से दूर सादगीपूर्ण जीवन शैली की ओर लौटते हुए लोगों का विश्लेषण किया गया है। कोई भी संकटकाल अराजकता को भी जन्म देता है, इस तथ्य को भी वर्तमान के परिप्रेक्ष्य में जानने का प्रयास किया गया है। तकनीक का चलन हमारे दैनिक जीवन में बढ़ा है किन्तु महामारी के आगमन ने अब इसके इस्तेमाल को अनिवार्य कर दिया है। तकनीक से दोस्ती आवश्यक है किन्तु इसके सकारात्मक और नकारात्मक प्रभावों को खंगालने का भी प्रयास किया गया है।

आधुनिक भारत में हम महामारियों के आगमन की शुरूआत सन् 1896 में मुम्बई में आए प्लेग से मान सकते हैं,उस समय अंग्रेजों का राज था। इसके बाद सन् 1918 में भारत में इन्फ्लूएंजा महामारी का प्रकोप हुआ। इस महामारी ने देश में 1 करोड़ 20 लाख से ज्यादा लोगों की जान ले ली।

वर्तमान में कोविड–19 से सारा देश जूझ रहा है। नवम्बर 2019 में चीन के वुहान नगर की एक सी–फूड मार्केट से निकले इस वायरस ने बहुत कम समय में विश्व को अपनी चपेट में ले लिया। "वैश्विक स्तर पर देखे तो लगभग 6.61 लाख लोगों की जान चली गई और 167.76 लाख लोग इस बीमारी से संक्रमित है।"[1]

कोविड–19 से सबसे ज्यादा प्रभावित होने वाले देशों में इटली और अमेरिका रहे हैं। भारत में इस बीमारी से मरने वालों की संख्या लगातार बढ़ रही है और विश्व में ये तीसरे पायदान पर आ गया है। "भारत में लगभग 15.84 लाख लोग कोरोना वायरस से संक्रमित है और लगभग 35000 लोग इस बीमारी से जान गंवा चुके हैं।" 2 ये आंकड़े रोज बढ़ रहे हैं। अलग–अलग विशेषज्ञ इस पर अलग–अलग मत व्यक्त कर रहे हैं। किसी का का मत है कि जुलाई 2020 में ये महामारी अपने चरम पर होगी, किसी के अनुसार नवम्बर 2020 में ये चरम पर होगी। भारत जैसे विकासशील देश में जहाँ करोड़ों की आबादी निवास करती है, इस प्रकार के विशेषज्ञों के अंदेशे केवल भय ही पैदा करते हैं और भय महामारियों से लड़ने की क्षमता को कम कर देता है। साथ ही राष्ट्र के मनोबल को भी तोड़ता है। किसी भी महामारी के प्रसार में अब तक के ज्ञात मानव इतिहास को खंगाला जाए तो एक बात स्पष्ट हो जाती है कि इसमें प्रवासी नागरिकों या कहें गतिशील मानव समुदायों की महत्वपूर्ण भूमिका होती है जैसे–व्यापारी, व्यवसायी, छात्र, पर्यटक और श्रमिक वर्ग आदि। भारत में भी इस बीमारी के संवाहक ये ही लोग बने। शुरूआत में संपन्न वर्ग अन्य देशों से इस बीमारी को साथ लाया। बाद में इनके सम्पर्क में आने वाले लोगों ने बीमारी के प्रसार को तीव्र गति से बढ़ाया। अन्ततः कामगारों के काम छिन जाने के कारण और कोई चारा न होने पर अपने गाँव, घरों की ओर लौटते मजदूर इस बीमारी के प्रसार के संवाहक बने। शुरूआत में सरकार ने इस बीमारी की रोकथाम के लिए 21 दिन के सम्पूर्ण लॉकडाऊन की घोषणा मार्च 2020 में की और प्रधानमंत्री मोदी

108. Dr. Ashutosh Mishra

प्रवासी साहित्य में नीति चिंतन : महाकवि हरिशंकर आदेश

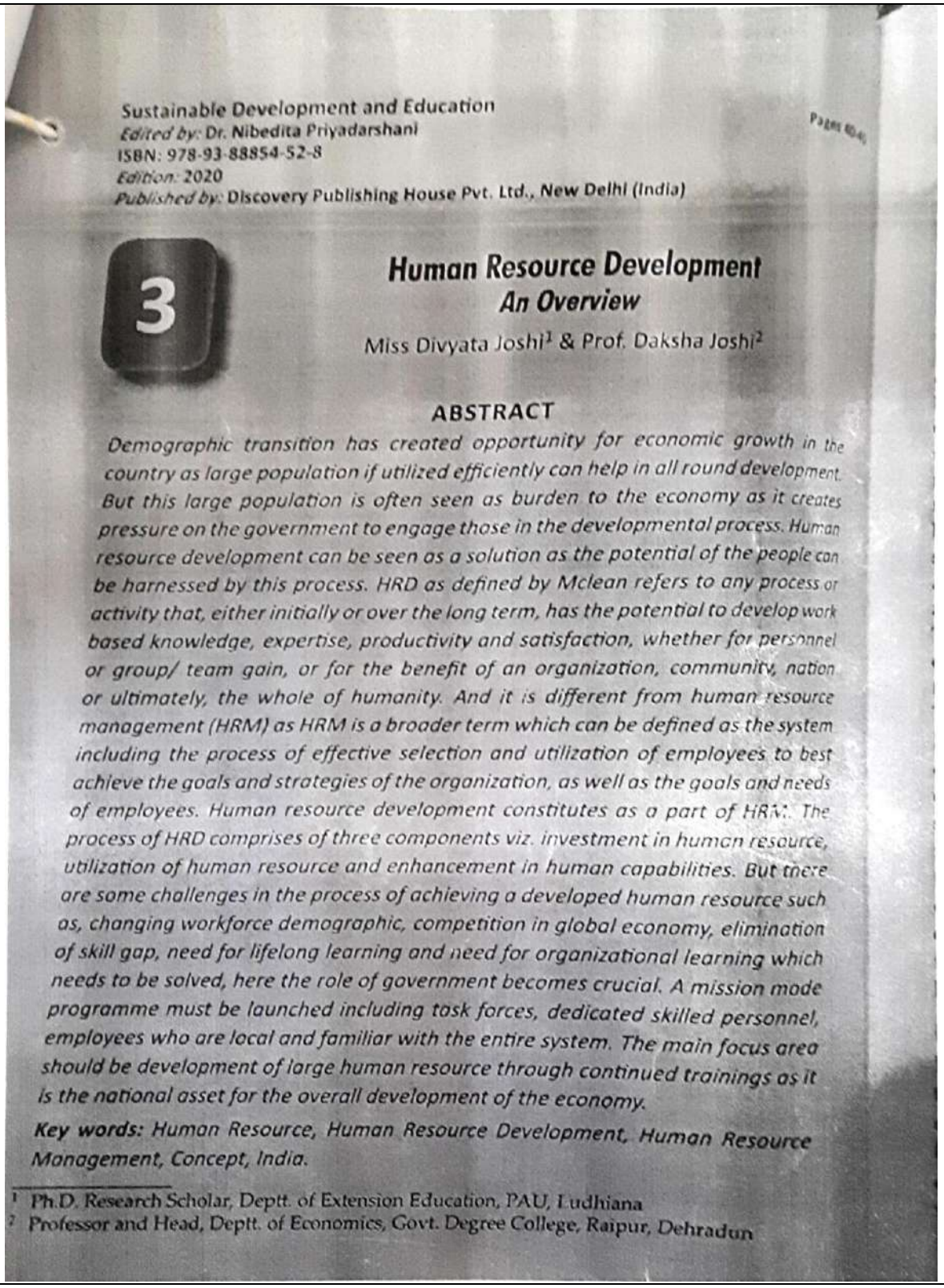
डॉ. अनुपमा त्रिपाठी
डॉ. आशुतोष मिश्र

मानव इतिहास के आदिकाल से मानवता के विकास में रीति-नीति का प्रमुख स्थान रहा है। रीति का अर्थ परंपरा, प्रचलन तथा प्रमुखता से लिया गया है। रीति का तात्पर्य जहाँ इन अभिप्रेतों को व्यक्त करता है, वहाँ नीति नैतिकता से संबंधित है। नीति शब्द तत्सम है। जिसका अर्थोत्पादन करते हुए भोलानाथ तिवारी ने लिखा है–

"नीति (सं.) 1 आचार पद्धति, व्यवहार की रीति, 2. व्यवहार की वह रीति, जिससे अपना कल्याण हो और समाज को भी कोई बाधा न हो, 3. सदाचार, लोक मर्यादानुसार व्यापार, 4. राजाओं के लिए आवश्यक ज्ञानशास्त्र, 5. युक्ति, उपाय, 6. नीति के ग्रंथ। वह पुस्तक जिसमें नीति की बातें कही गई हों। जैसे शुक्र नीति, चाणक्य नीति आदि। उ.2 नीति निपुन जिन्हें कई जग लीका। (रामचरितमानस 2/131/1)"[1]

वामन शिवराम आप्टे ने नीति शब्द का अर्थ व्यक्त करते हुए कहा है–

"नीतिः (स्त्री.) (नीक्तिन्) 1. निर्देशन, दिग्दर्शन, प्रबंध, 2. आचरण, चाल-चलन, व्यवहार, कार्यक्रम, 3. औचित्य, शालीनता, 4. नीति कौशल, नीतिज्ञता, बुद्धिमत्ता, व्यवहार कुशलता-आर्जवं हि कुटिलेषु न नीतिः - नै. 5/103, रघु. 12/69, कु. 1/22, 5. योजना, उपाय, कूटयुक्ति - मा. 6/3, 6. राजनय, राजनीति विज्ञान, राजनीतिज्ञता, राजनीतिक बुद्धिमत्ता - आत्मोदयः परगनिद्रवयं नीति रित्तीयति शि. 2/30, भग 10/38, 7. आचार शास्त्र, आचार, नीति शास्त्र, आचारदर्शन, 8. अवाप्ति, अधिग्रहण, 9. देना, प्रदान करना, प्रस्तुत करना, 10. संबंध, सहारा। सम.- कुशल, ज्ञ, - निष्ण, - विद् (दि.) 1. राजनीतिविशारद, राजनीतिज्ञ, नीतिज्ञ, 2.

109.	Prof (Dr) Daksha Joshi	

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3

Human Resource Development
An Overview

Miss Divyata Joshi[1] & Prof. Daksha Joshi[2]

ABSTRACT

Demographic transition has created opportunity for economic growth in the country as large population if utilized efficiently can help in all round development. But this large population is often seen as burden to the economy as it creates pressure on the government to engage those in the developmental process. Human resource development can be seen as a solution as the potential of the people can be harnessed by this process. HRD as defined by Mclean refers to any process or activity that, either initially or over the long term, has the potential to develop work based knowledge, expertise, productivity and satisfaction, whether for personnel or group/ team gain, or for the benefit of an organization, community, nation or ultimately, the whole of humanity. And it is different from human resource management (HRM) as HRM is a broader term which can be defined as the system including the process of effective selection and utilization of employees to best achieve the goals and strategies of the organization, as well as the goals and needs of employees. Human resource development constitutes as a part of HRM. The process of HRD comprises of three components viz. investment in human resource, utilization of human resource and enhancement in human capabilities. But there are some challenges in the process of achieving a developed human resource such as, changing workforce demographic, competition in global economy, elimination of skill gap, need for lifelong learning and need for organizational learning which needs to be solved, here the role of government becomes crucial. A mission mode programme must be launched including task forces, dedicated skilled personnel, employees who are local and familiar with the entire system. The main focus area should be development of large human resource through continued trainings as it is the national asset for the overall development of the economy.

Key words: *Human Resource, Human Resource Development, Human Resource Management, Concept, India.*

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Original Research Paper

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TRADITIONAL PHYTOTHERAPY USED BY BHUTIA COMMUNITY OF UTTARKASHI DISTRICT OF UTTARAKHAND FOR DERMATOLOGICAL DISORDERS

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ABSTRACT Ethno-medicinal survey was undertaken from traditional healers of Bhutia tribal community of Urrarkashi district for the use of medicinal plants in the treatment of different skin diseases such as dog and insect bite, burns, eczema, abscesses, scabies, ringworm, cuts and wounds, boils, leprosy, blisters, allergy, itching, pimples, leucoderma, prickly heat, warts, septic ulcers, and other skin diseases during different season of March 2016 to May 2017. The indigenous knowledge of tribal traditional healers having practical knowledge of plants in medicine were interviewed in five villages of Uttarkashi district of Uttarakhand and plants used for medicinal purposes were collected through questionnaire and personal interviews during fieldtrips. A total of 60 plant species of 43 families are documented in this study. The medicinal plants used in the treatment of skin diseases by tribal's are listed with botanical name (in binomial form), family, local names, habit, availability, parts used, and mode of preparation. This study showed that Bhutia tribal people in the studied parts of Uttarkashi district continue to depend on the medicinal plants at least for the treatment of primary healthcare.

KEYWORDS : Bhutia tribe; Traditional knowledge; Dermatological disorders; Medicinal plants; Uttarkashi; Uttarakhand.

INTRODUCTION

Herbal medicine refers to the use of herbs for their medicinal value. A herb is a plant or a plant part valued for its medicinal, aromatic or savoury qualities. Usually, herbalists use leaves, flowers, stem, berries, seeds, whole plant and roots of plants to prevent, relieve, and treat illness. Historically, herbal medicine is the oldest form of health care that had been used by all cultures. Throughout the middle ages, homegrown botanic are the only medicines readily available and for centuries, no self-respecting household would be without a carefully tended and extensively used herb garden. In most parts, herbal healing was passed from generation to generation by means of children being taught by their mothers (Shizha and Charema, 2011). People through their exploration, conquest and most importantly, the desire to aid the sick, ancient civilizations tended to borrow and adopt the skills, knowledge of medicine and healing of various cultures to their own (Sumner, 2000).

The knowledge of medicinal plants has been accumulates in the course of many centuries based on different medicinal systems such as Ayurveda, Unani, and Siddha. During the last few decades, there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world (Lev, 2006). Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. In traditional systems, the plants have been used in successful management of various disease conditions like respiratory tract infection, gastrointestinal problems, dermatological disorders, and in the treatment of hepatic and cardiovascular disorders (Sen, 1993).

The knowledge of tribes has, associated with the traditional healing practices, using wild plants, is now fast disappearing due to modernization and the tendency to discard their traditional life style and gradual migration to the main stream. There is an urgent need to study and document the precious knowledge for posterity. According to World Health Organization, more than 80 % of the world's population relies on traditional herbal medicine for their primary healthcare. In view of exploitation and conservation of tribal knowledge, an attempt has been made to study the ethno-medicinal aspects of Uttarkashi district in Uttarakhand. The major aim and objective of the present study is to highlight the traditional uses of some medicinal plants in Uttarkashi district for the treatment of skin diseases.

MATERIALS AND METHODS

Study Area

The study area of the present work is located at the Uttarkashi district near Gangotri shrine. Five locations dominated with the Bhutia tribal community and plants utilized by them for dermatological disorders were identified for the present study. Geographically these sites were located at 30° 44' to 30° 56' N latitude and 79° 02' to 78° 42' E longitude at an altitudinal range of 2300 m to 2700 m asl. The soil of the study sites is slightly acidic (pH 5.5-6.5) and sandy loam, mixed with gravels. The main forest associates were *Hippophae silicifolia, Cedrus deodara, Betula utilis, Rosa webbiana, Juniperus macropoda, Cotoneaster* spp., etc. The data of rainfall, atmospheric temperature, relative humidity and solar radiation were also recorded by automatic rain gauge, automatic thermo hygrograph and solarimeter respectively. The meteorological data were recorded at the study sites, revealed that maximum average temperature of the hottest month i.e., June was 21.20C and minimum average temperature of the coldest month i.e., January was -3.40C and relative humidity ranges from 23-100 percent. Annual precipitation received by the area during the study period was 910 mm. Being a dry temperate zone, this area received very little rainfall. Maximum rainfall was found in the month of July. Hailstones were very common during winter months in this area during the winters, from November to March, whole study area remains covered by thick blanket of snow.

The Bhutia tribal community of the study area prefers traditional medicinal practice to the modern medicinal system because they know more about the medicinal plants which are easily available in their locally area and herbal formulations are comparatively cheaper and free from the side effects. The Bhutia tribal community of the study area is not exception to the present stream of modernization and traditional medicinal practice seems to be disappearing among the ethnic communities of the study area. As indigenous knowledge on usages of medicinal plants is transmitted without any systematic process, and younger generations of the communities are not interested in traditional healing system because it has no/very little scope for money, so they engage themselves in other occupations.

Local Traditional Healers

Local traditional healers of Bhutia tribal community having practical knowledge of plants in medicine, were interviewed in five villages villages (Sukki, Jhala, Bagori, Dunda, and Birpur) of the district during March 2016 to May 2017. During the course of the study, three field trips were carried out in the study area. Method of selecting informants depends upon the distribution of local people having folk knowledge. They were requested to collect specimens of the plants they know or to show the plant species on site. These informants were traditional healers themselves or had tradition of healing in their families and had knowledge of the medicinal use of plants. The wealth of medicinal plant knowledge among the Bhutia tribe of this district is based on beliefs and observations. This knowledge has been transmitted orally from generation to generation, however it seems that it is vanishing from the modern society since younger people of Bhutia tribal community is not interested to carry on this tradition.

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SEX POPULATION RATIO OF THE FRESH WATER PRAWN, *MACROBRACHIUM ASSAMENSIS* (TIWARI) IN RIVER SONG FROM DOON VALLEY, UTTARAKHAND, INDIA

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ABSTRACT : *Macrobrachium assamensis* classified under freshwater prawn belongs to the family Palaemonidae. A total of 245 prawns (107 males and 138 females) was collected during the course of study. The maximum total length of 64 mm for males and 69 mm for females was recorded. The minimum size observed was 32 mm for male and 35 mm for female prawn. The sex population was recorded season wise, fluctuated from a most extreme in autumn (1.00male : 1.14 female) and least in summer (1.00male : 1.72 female).

Key words : Sex ratio, *Macrobrachium assamensis*, spring-fed river.

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INTRODUCTION

In India the freshwater prawn *Macrobrachium assamensis* is a stunning little size crustacean found in the Doon valley of Uttarakhand state, India. It is about the first time that this prawn species has been considered

Garhwal Himalayan region includes; the first report of prawn in Khoh river (Bahuguna *et al*, 2010), breeding capacity (Bahuguna and Kumar, 2011a), breeding ecology (Bahuguna, 2013a), sex population ratio (Bahuguna, 2013b), breeding behaviour (Bahuguna and Kumar,

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BREEDING CAPACITY OF FRESHWATER PRAWN *Macrobrachium assamensis* (*Tiwari*) IN RIVER SONG FROM DOON VALLEY, UTTARAKHAND, INDIA

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Authors RR and KKR designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors DK and RK collected the sample, managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Present paper deals with the breeding capacity of *Macrobrachium assamensis* from the River Song in Doon

113.	Dr. Ritu Kashyap	# OBSERVATION ON LENGTH-WEIGHT RELATIONSHIP AND RELATIVE CONDITION FACTOR OF A FRESH WAT FISH, Barilius barna FROM INDIA ## Authors RAJESH RAYAL, DALIP KUMAR BHATIA, RAKESH KUMAR, RITU KASHYAP ## Publication date 2021/9/9 ## Journal UTTAR PRADESH JOURNAL OF ZOOLOGY ## Pages 95-106 ## Description An Observation has been made on length-weight relationship and relative condition factor of a freshwater

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PLANKTON DIVERSITY OF NATIONAL RIVER AT TWO DIFFERENT SITES WITH HARIDWAR CITY

Ritu Kashyap*

ABSTRACT

This study is focused on plankton diversity of the Ganga River during the year 2019. During the present study phytoplankton and zooplankton were identified under the microscope with the help of standard photographs of Edmondson (1959). During the study period Bacillariophyceae was dominant over other groups. Bacillariophyceae constitutes 64% followed by chlorophyceae (29%) and Cyanophyceae (7%). Zooplankton diversity was also identified during study period. During the study Protozoans (42%) were dominant group followed by rotifera (33%), Cladocera (21%) and Copepoda (4%). It was also found that plankton diversity was higher during the winter season followed by summer season and minimum during the monsoon season. It was also revealed that anthropogenic activities also reduce the plankton diversity. It was noted that the site-I i.e. Sapta rishi ghat has much more planktonic diversity as compared to site-II i.e. Har ki Pauri.

Keywords : Phytoplankton, Zooplankton, Ganga River, Sapta Rishi Ghat, Har Ki Pauri

INTRODUCTION

Ganga river ecosystem is one of the largest fresh water ecosystems of India. Biodiversity is one of the most important aspects of any ecosystem. Plankton are the microscopic milieu of aquatic ecosystem. Phytoplankton are the producers of aquatic ecosystem as they store sun energy and supply the energy to higher trophic level. They make their own food by the process of photosynthesis. Phytoplankton communities provide food to zooplankton, fishes and other higher organisms in aquatic ecosystem. Plankton are the most sensitive floating community which is being the first target of aquatic pollution, thus any pollution in aquatic ecosystem affects diversity as well as biomass of this community **(Summerwal, 2012)**. This study is basically to find out the plankton diversity of two different sites of same ecosystem.

MATERIALS AND METHODS

To assess the plankton diversity of Ganga river, surface water samples were collected from the two selected sites viz. Sapta Rishi Ghat and Har Ki Pauri. 100 liters of surface water from selected was filtered through a plankton net of bolting silk No 20 (76 m mesh size) and a concentrate sample of 200 ml was prepared 100 ml of sieved residue was transferred to a bottle and preserved in 4% formaline for identification using standard keys **(APHA, 1995, Edmondshon (1959).** Samples were collected monthly during the study period, from January 2019 to December 2019 at two sampling sites.

Results and Discussion : Total numbers of 42 genera of phytoplankton were encountered during the one year of study. The occurrence of various phytoplankton species at two selected sampling stations. Bacillariophyceae which is brown algae and accounted for the major share of phytoplankton diversity in terms of phytoplankton diversity, represented by 27 genera (*Achnanthes, Amphipleura, Amphora, Bacillaria, Biddulphia, Brebissonia, Caloneis, Cocconeis, Cymatopleura, Cymbella, Denticula, Diatoma, Diatomella, Epithelmia, Eunotia, Fragillaria, Frustulia,*

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PHYSICO-CHEMICAL CHARACTERISTICS OF GANGA RIVER WATER AT TWO SELECTED SITES WITHIN HARIDWAR CITY, UTTARAKHAND : A COMPARATIVE STUDY

Ritu Kashyap*

ABSTRACT

This study is focused on physico-chemical parameters of the Ganga River water during the year 2019. Water samples were collected monthly from two selected sites viz. Sapta Rishi Ghat and Har ki Pauri. During the present study physico-chemical parameters were monitored with the help of standard methods of APHA and Trivedi & Goel. Selected physico-chemical parameters such as temperature, total Solids (TS), total dissolved solids (TDS), total suspended solids (TSS), turbidity, transparency, pH, dissolved oxygen (DO), Bio-chemical oxygen demand, total hardness, and chlorides were analyzed. It was found that anthropogenic activities responsible for water quality degradation in Ganga River.

Keywords : Physico-chemical parameters, Ganga River, Haridwar, Sapta Rishi Ghat, Har ki Pauri

Introduction :

Conserving aquatic resources is critical issue at international level. Water is a habitat for the different species such as fishes, phytoplankton zooplankton, reptiles, amphibians, mammals and some aquatic birds. But unfortunately, water quality of aquatic bodies are depleting very fast than usual. Various anthropogenic activities such as deforestation, dumping of solid waste, excessive use of agrochemicals, urbanization, industrialization, mining etc. are responsible for water quality depletion. The water quality data of different reservoirs of word showed that the man made activities certainly responsible for water quality depletion. Ganga river is originates from Gaumukh and after 2525 km journey it falls in to Bay of Bengal. Though this journey Ganga river Crosses various cities such as Rishikesh, Haridwar, Kanpur, Allahabad, Varanasi, Patna etc. Haridwar is known for its religious importance. Millions of devotees visit the Haridwar and take the bath in Sacred Ganga River. Mass gathering in Haridwar may deteriorate the quality of Ganga river. This study is basically focused to find out the impact of anthropogenic activities of water quality of Ganga river.

Materials and Methods

The study was carried out by systematic collection of water samples from two spot namely Site-I i.e. Sapta Rishi Ghat and Site-II i.e. Har Ki Pauri. Physico-chemical parameters viz. Temperature, total solids, total dissolved solids, total suspended solids, turbidity, transparency, pH, dissolved oxygen, bio-chemical oxygen demand, total hardness and chlorides were analyzed by the standard methods of **APHA (1995) and Trivedi & Goel (1986).**

Results and Discussion

During the present study, the highest and lowest mean values of temperature were observed 31.2°C and 15.2°C on site-II i.e. Har Ki Pauri and Site-I i.e. Sapta Rishi Ghat during the month of June and January, respectively. In present study it was noticed that temperature declined from July to January and then gradually increases onwards. Similarly, **Abowei (2010)** observed similar pattern of temperature in aquatic ecosystem. During the present study i.e. 2019, the overal lowest and highest mean values of total solids were

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Annealing temperature-dependent structural and electrical properties of $(Ta_2O_5)_{1-x}$ - $(TiO_2)_x$ thin films, $x \leq 0.11$

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Keywords:
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ABSTRACT

$(Ta_2O_5)_{1-x}$- $(TiO_2)_x$ (TTO_x) thin films, with x = 0, 0.03, 0.06, 0.08, and 0.11, were deposited using magnetron direct current (DC) sputtering method onto the P/boron-silicon (1 0 0) substrates by varying areas of Tantalum and Titanium metallic targets, in oxygen environment at ambient temperature. The as-deposited thin films were annealed at temperatures ranging from 500 to 800 °C. Generally, the formation of the Ta_2O_5 structure was observed from the X-ray diffraction measurements of the annealed films. The capacitance of prepared metal–oxide– semiconductor (MOS) structures of Ag/TTO_x/p-Si was measured at 1 MHz. The dielectric constant of the deposited films was observed altering with varying composition and annealing temperature, showing the highest value 71, at 1 MHz, for the TTO_x films, x = 0.06, annealed at 700 °C. With increasing annealing temperature, from 700 to 800 °C, the leakage current density was observed, generally decreasing, from 10^{-5} to 10^{-8} A cm^{-2}, for the prepared compositions. Among the prepared compositions, films with x = 0.06, annealed at 800 °C, having the observed value of dielectric constant 48, at 1 MHz; and the leakage current density 2.7×10^{-8} A cm^{-2}, at the electric field of 3.5×10^5 V cm^{-1}, show preferred potential as a dielectric for high-density silicon memory devices.

1. Introduction

Interest in searching for high dielectric constant (K) materials for memory elements to miniaturize electronic gadgets has increased by manifold in the last few decades. For this purpose, many high-K metal oxides, e.g., titanium oxide (TiO_2), tantalum pentoxide (Ta_2O_5), etc. [1–4], have been examined. These materials can substitute the elemental silicon-based dielectrics, such as SiO_2, SiO_xN_y, etc. Ta_2O_5 is used frequently as a gate dielectric due to its high dielectric constant and compatibility with silicon devices and the existing process infrastructure for manufacturing memory devices [5]. The dielectric characteristics have been reportedly improved when other metal oxides were added to Ta_2O_5 [6]. Electrical properties of Ta_2O_5 have been found to improve by adding TiO_2 or Y_2O_3 [7,8], which has been associated with the compensation of oxygen vacancies in Ta_2O_5 by the added material. The relative permittivity (K) of Ta_2O_5 films was considerably enhanced with a small fraction of TiO_2 and annealing [7,9]. With the doping of 8% (mole) TiO_2, the K of bulk Ta_2O_5 was observed to drastically increased [9], from 35 to 126. Gan et al. [10] observed the maximum value of dielectric constant 55 for the sputter-deposited annealed films using $(TiO_2)_{0.08}$- $(Ta_2O_5)_{0.92}$ ceramic target. With high dielectric constant, low leakage current requirements must also have to be fulfilled in dynamic random access memory (DRAM) capacitors for better performance [11]. With annealing, Ta_2O_5 thin films' leakage current has been reportedly found to improve [12–17]. The optimization of high dielectric constant and low leakage current density together has technical potentiality for DRAM applications. In the present study, TTO_x thin films of different compositions were deposited by sputtering the varying areas of tantalum and titanium metal targets in oxygen. Presently, the observed structural, compositional, and electrical characteristics of the deposited thin films have been reported. The feasibility of the potential composition for memory devices, in terms of high dielectric constant and low leakage current density, has been analyzed.

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Post deposition annealing dependent structural and C-V characteristics of $(Ta_2O_5)_{0.965}$-$(TiO_2)_{0.035}$ thin films

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ABSTRACT

$(Ta_2O_5)_{1-x}$-$(TiO_2)_x$ (TTO) thin films, with x = 0.035, were deposited onto the P/boron-silicon (100) semiconducting substrates by reactive direct current (DC) magnetron sputtering of mosaic Ta and Ti metal targets, at ambient temperature. As-deposited films have been passed through the process of annealing at the temperatures, ranging from 500 to 800 °C. X-ray diffraction measurements, generally, show the formation of Ta_2O_5 structure of the annealed films. Metal–oxide–semiconductor (MOS) structure of Ag/$(Ta_2O_5)_{1-x}$-$(TiO_2)_x$/p-Si (Ag/TTO/p-Si), with x = 0.035, was formed, and capacitance of the structure was measured, at room temperature and 1 MHz. Capacitance of prepared MOS structure was measured, and found generally, increasing with annealing temperature. Among the prepared films, maximum value of dielectric constant was found 45, at 1 MHz, for the films annealed at 700 °C. Frequency dependent behaviour of dielectric loss was observed, and was found minimum value of 0.022, at 200 kHz, for the films deposited at room temperature.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Processing & Manufacturing Applications.

1. Introduction

The consumer interest in miniaturization of electronic memory devices initiated the search of high dielectric constant materials. Some of the high dielectric constant metal oxides, like tantalum pentoxide (Ta_2O_5), titanium oxide (TiO_2), etc. [1–4], have been explored for this purpose, which have the potential to replace the basic silicon based dielectrics, e.g. SiO_2, SiO_xN_y, etc. The high dielectric constant and compatibility with the silicon devices [5], made Ta_2O_5 a preferred choice as a gate dielectric. The dielectric properties have been reportedly observed enhanced with the addition of other metal oxides to Ta_2O_5 [6]. The dielectric constant of bulk Ta_2O_5 was found considerably raised, from 35 to 126, by adding 8% (mole) TiO_2 [7]. The maximum dielectric constant 55, was reported by Gan et al. [8], for the annealed films deposited by sputtering of $(TiO_2)_x$-$(Ta_2O_5)_{1-x}$ bulk targets with x = 0.08. Along with the doping, the significant effect of substrate temperature as well as post-deposition annealing was reportedly observed for the improved microstructure and better quality of the film [9]. In the present piece of work TTO thin films, with x = 0.035 were deposited on the silicon (p-type) substrates by direct current (DC) magnetron sputtering of Ta and Ti metal targets in oxygen ambient. This report comprises the observed structural and dielectric properties of the deposited films.

2. Experimental

(Ta_2O_5)-(TiO_2) composite thin films were deposited onto the boron-doped silicon (100) substrates by reactive DC magnetron sputtering. The silicon substrates were washed with the help of deionised water, acetone and hydrogen fluoride (HF), followed by the ultrasonication for 5 min in the deionised water to eliminate surface impurities. The chemically cleaned and dried silicon substrates immediately placed in a vacuum chamber for deposition. Mosaic target assembly of Ta (purity 99.99%) and Ti (purity 99.99%) metals were used for sputtering in such a way that the composition of Ta and Ti may be obtained in the resultant thin film samples. Each target was having the dimension of 2 in. diameter, and 1 mm thickness. The horizontally rotating substrate holder

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BIOACTIVE PHYTOCHEMICAL COMPOUNDS AND HEALTH BENEFITS OF SOME MEDICINAL PLANTS

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Abstract

Medicinal and food plants as well as their bioactive fraction have been used by diverse human cultures since ancient times. These plants provide multiple health benefits because of the presence of different type'sphytochemical compound and that are responsible for various biological activities. General composition including various bioactive and their health contribution has been reviewed in this paper.

Key Words: *Medicinal plants, Biochemical compound, Health benefits*

Introduction

The term of medicinal plants include a various types of plants used in herbalism and some of these plants have a medicinal activities. These medicinal plants consider as a rich resources of ingredients which can be used in drug development and synthesis. Besides that these plants play acritical role in the development of human cultures around the whole world.

Plant products have been used in diseases prevention and treatment of disorders for decades (Hopper and Field, 1937). According to Kinghorn *et al.* (2011) and Newman and Cragg (2012), numerous pharmacologically active drugs have been derived from natural resources including medicinal plants. Te therapeutically role of a number of plants in diseases management is still being researched and used. Te little side effects associated with the use of

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ANALYSIS OF TOTAL VITAMIN C CONTENTS IN VARIOUS FRUITS AND VEGETABLES BY UV-SPECTROPHOTOMETRY

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Abstract

In the present study, a simple UV- spectrophotometric method for the determination of the total vitamin C (ascorbic acid + dehydroascorbic acid) in various fruits and vegetables is described. In this method bromine water is added which oxidizes the ascorbic acid into dehydroascorbic acid. After coupling with 2,4 -dinitrophenyl hydrazine at 37°C temperature for about three hours, the solution is treated with 85% H_2SO_4 to produce a red color complex. Then, the absorbance was spectrophotometrically measured at 521 nm. The content of vitamin C was 1.868 to 51.74 mg/10g in fruits and 0.841 to 17.416 mg/10g in vegetables. The standard deviation and the possible interfering factors are also discussed.

Keywords: *Ascorbic acid, UV spectrophotometer; total vitamin C, 2,4-dinitrophenylhydrazine, spectrophotometric method, fruit and vegetables.*

Introduction

Human health is very important to our survival. Vitamins help the human to maintain a healthy diet. They serve as essential components of the specific coenzymes participating in metabolism and other specialized activities. Vitamin C is one of the most important vita-min for human nutrition that is supplied by fruits and vegetables. L-Ascorbic acid (AA) is the main biologically active form of vita-min C. Ascorbic acid is reversibly oxidized to form L-

120. Mrs. Rashmi Nautiyal

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Impact Of Covid-19 On Employment Across Sectors

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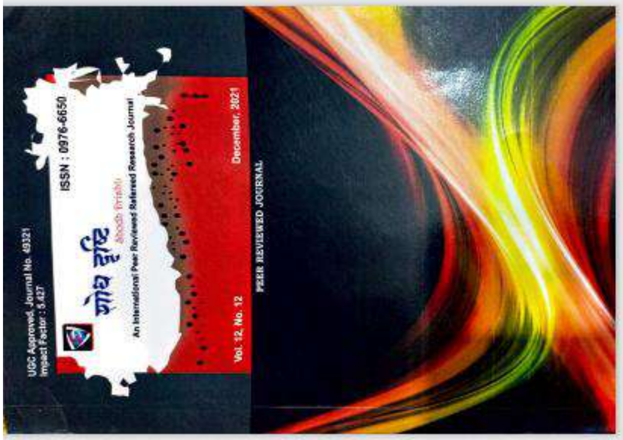
Abstract: India is a fast growing economy among the developing nations. All sectors like tourism, real estate, manufacturing, education etc are growing very fast. Thisdevelopment has generated lots of employment for the people. The employment had been generated for both skilled and non-skilled people. The employment scenario has been badly affected by the pandemic called COVID-19, which originated from China. As it spreads by touching and physical proximity, the government wasforced to impose lockdown in the whole country. Due to this lockdown, all the activities going on in whole country were stopped. This affected the employments ofpeople in a big way. Private sector started removing of people keeping in mind the loss to their business. Although government sector was least effected but those employee whose salary was based on manufacturing/production were partially affected. The lockdown has affected employments in all sectors of the country. Sectors like tourism, manufacturing, real estate and transportation were affected badly due to this pandemic. This reduction in employment will have long termeffect. It will also affect the economic growth of country.

Key Words: - COVID-19, employment, pandemic, economic growth.

1. INTRODUCTION:

The growth of Indian economy is going up day by day as compared to other developing countries. The growth has been in many sectors. This growth has generated lots of employment to the people. The employment has been generated for both skilled and un-skilled people. India has large skilled and even larger un-skilled man power. The people are contributing in the development of country in a big way. All sectors require man power to achieve their targets, and therefore the employments of people had been increasing in every sector.

In 2020, not only India but whole world has faced a pandemic called COVID-19. This is a virus generated disease, which was first found in Buhran city of China. As it is a new virus so there was no readily available medicine/vaccine to stop the effect and spread of this virus. As it was spreading very fast by touching each other, so government imposed a complete lockdown in the

121.	Dr. Manju Kogiyal	

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Gender Differences in Family Relations Including Family Environment among Police Personal of Uttrakhand

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ABSTRECT

The police organization is no exception to this rather policing is widely recognized as more stressful than any other occupation the nature of work, irregular duty hours and many more factors, which can trigger stress in police personnel. Stress may affect the personnel and professional life of police personnel. Therefore it was felt to study the occupational stress and its relationship with family. This study Independent variable selected for the study were age, family type, family size, year of job experience and no. of transfer, whereas dependent variable were occupational stress, family environment The objective of the study was to study the gender difference in family environment of police personal of rural and urban area of Uttarakhand. The existing family environment of rural and urban police officers is presented in terms of frequency and percentage. The family environment "involves the circumstances and social climate conditions within families.

Keywords: Gender differences, family relation, family environment

INTRODUCTION

Human beings are social beings from birth itself they are born into a social unit that is family. A family is the smallest unit of the society. In society, people are from different religion acquiring different culture and for the maintenance of peace, law and order; a body was made by the government named police. Police job is very difficult to do because police have to work on holidays, festivals when others are enjoying the holidays and celebrating the festivals. **Anderson *et al* (2002).** Police officers are often exposed to stressors beyond the realm of normal human experience and knowledge. So police work is said to be very stressful. Every person experience an amount of stress & they live with it, but work related stress which affect the professional as well as the social life of the person is very dangerous because it affects social and family relations. In police department, police personnel have to work for 24/7 and called any time for reporting and duty may interfere the house hold and family responsibility of women police personal especially when they were living in nuclear family without any support for their child care which may lead to stress.

Objective:

The objective of the study was to check the stress Gender Differences In Family Relations Including Family Environment.

Selection of Sample

The study was conducted in the state of Uttarakhand and two districts were selected for this purpose Udham Singh Nagar for urban sector and Pithoragarh for rural sector. From these districts two block were selected, Rudrapur from Udham Singh Nagar and Pithoragarh from Pithoragarh district. Total 140 Police personnel (70 from Rudrapur & 70 from Pithoragarh) were interviewed for this study. Independent variable selected for the study were age, family type, family size, year of job experience and no. of transfer, whereas dependent variable were occupational stress, family environment.

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GENDER DIFFERENCES IN OCCUPATIONAL STRESS AMONG POLICE PERSONAL OF RURAL AND URBAN AREA OF UTTARAKHAND

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Abstract

To identify the specific sources of occupational stress and the professional burnout experienced by police personal of rural and area of uttrakhand. A special emphasis is given to gender differences. The purpose of the study was to identify the effect of occupational stress on police personnel family relation including marital satisfaction and family environment. The study was conducted in the state of Uttarakhand and two districts were selected for this purpose Udham Singh Nagar for urban sector and Pithoragarh for rural sector. From these districts two blocks were selected, Rudrapur from Udham Singh Nagar and Pithoragarh from Pithoragarh district. Total 140 Police personnel (70 from Rudrapur & 70 from Pithoragarh) were interviewed for this study. Independent variable selected for the study were age, family type, family size, year of job experience and no. of transfer, whereas dependent variable were occupational stress, family environment and marital satisfaction. The data were collected using structured questionnaire for background information, family environment and marital satisfaction and occupational stress index (OSS) by A.K. Srivastav & A.P. Singh (1984). The data obtained was analyzed using frequency, percentage, mean, standard deviation, t- test, and Chi-square test.

Keywords: Gender Differences, Occupational Stress, Police Personal.

Introduction

"The police are the public and the public are the police; the police being only members of the public who are paid to give full time attention to duties which are incumbent on every citizen in the interests of community welfare and existence."

- Robert Peel

Police force is a very big organization, the demand & necessity of this job is very high. Police plays fundamental role in the society maintaining peace, prevention of crimes and protection of the public. Police job is very difficult to do because police have to work on holidays, festivals when others are enjoying the holidays and celebrating the festivals. **Anderson et al (2002)** Police work is exhausting because officers perform physically demanding duties and frequently work long hours or night shifts. Police officers are often exposed to stressors beyond the realm of normal human experience and knowledge. So, police work is said to be very stressful. In earlier times, when women were non-working then they were engrossed with all the household chores, and when the male member of the family come back from their job with work-related stress and with this stress the male member had to guide their children as the head of the family. But now-a-days women play an income generating role in her house in spite of other household duties. They have to play all the roles of a family i.e., wife, mother, and other as an employee. Women are empowered and doing many jobs like police, teacher, and doctors and having dual demand of the job/work related stress and family they may face adjustment problem in their life. Traditionally, due to physical requirements in police occupation, it is considered as a male dominance occupation but now a day's women police now an integral part of the police forces all over the country

Objective

The first objective of the study was to check the stress level and analyze the differences of occupational stress among the rural and urban police personal across their gender. The existing level of stress of rural and urban police officers is presented in terms of frequency and percentage.

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Investigation of Dielectric and Ferroelectric Properties of Titanium Doped $AgNbO_3$ Ceramic

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Abstract: The electrical properties of the titanium doped $AgNbO_3$ system are defined in this paper. In the modified system, doping moderately replaced Nb^{5+} with Ti^{4+} ion where the ceramics are prepared using solid-state reaction technique. The dielectric characteristics were examined at frequencies ranging from 1 kHz to 100 kHz. The dielectric value of the modified systems increased substantially while the P-E curve emerged with a value of relatively increased spontaneous polarization.

Keywords: $Ag(Nb,Ti)O_3$; $AgNbO_3$; Dielectric properties; Ferroelectric properties;

Introduction

Silver niobate ($AgNbO_3$) is most exciting ferroelectric material, which has a polarization value of 52 $\mu C\ cm^{-2}$ (Fu et al. 2007) has been extensively studied as a parent substance for electronic applications (Lines et al. 2001). At room temperature, the $AgNbO_3$ has skewed perovskite structure exhibits 6 reversible transitions in phase related to structural change, as confirmed by the dielectric dispersion. The number of multiple phase transitions associated with structural change in $AgNbO_3$ is due to the cations ordering i.e. A-site (Ag) and B-site (Nb) (Sciau et al. 2004; Levin et al. 2009). A previously supported result of the centrosymmetric Pbcm structure, which specifies antiferroelectricity in $AgNbO_3$, was later surpassed by groups of researchers who emphasized the $Pmc2_1$ structure to explain ferroelectricity in $AgNbO_3$ (Yashima et al. 2011; Chang et al. 2012). In perovskite structure of $AgNbO_3$, off centering A-site and B-site cations can be seen, which show strong A-O bonding covalency. According to previous theoretical research the Nb-site of $AgNbO_3$ has ferroelectric ordering, while the Ag-site atom has antiferroelectric ordering. As a base material, a lot of modifications have been done on $AgNbO_3$, where monovalent and pentavalent ions are doped into the Ag & Nb site, respectively. In this present work, we modified the $AgNbO_3$ system with heterovalent titanium (Ti^{4+}) cations and examine the electrical properties of the modified system which is expected to be helpful for basic research and application.

Experimental Procedures

Solid-state reaction technique is used for preparation of the samples. Powdered silver oxide Ag_2O (99.5%), niobium pentaoxide Nb_2O_5 (99.99%) and titanium dioxide TiO_2 (99.99%) were used as a base materials. The lower molecular weight quantity of TiO_2 ($x = 0.02, 0.04$) was used for modified $Ag(Nb.Ta)O_3$ system. All the materials first dried at 200 °C for 2 hrs to remove moisture and weighted in stoichiometric ratio. In next step all the materials manually mixed for 6 hrs and calcined at 850 °C for 6 hrs. The calcined powder pressed into 10mm pallets and sintered for 2 hrs at 1050 °C. XRD is

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Investigation of Catalytic Property of Plant Mediated Silver Nanoparticles as Degradation of Toxic Dyes in Water

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Abstract: Nowadays, silver nano-compounds mediated by plant materials are widely used material in daily life chemistry as well as across the industries, medical, electronics, ceramics, and in all research fields, because it has some specific characteristics such as non-toxic, inexpensive, nature-friendly, heat resistant, catalytic activity, high electric conductivity and so on. In the present work we reported the photo-catalytic dye degradation of green synthesized silver nanoparticles of size 43.75 nm by using the flowers extract of *Rhododendron campanulatum* tree. Synthesized AgNPs have worked as a strong nano-catalyst for the degradation of toxic dyes such as malachite green (MG), and acridine orange (AO). As a catalyst, synthesized AgNPs degraded the malachite green (MG) dye 47.22 % within 90 min, and acridine orange (AO) dye 66.16 % in 4 h of solar irradiation, while in the absence of nano-catalyst, MG and AO dye degraded upto 22.13 % in 90 min and 46.75 % in 4 h of photo-irradiation respectively. Synthesized nano material (AgNPs) may be applicable as a strong catalytic agent for the degradation of toxic dyes, water purifying agent as well as a good antioxidant agent.

Keywords: *Rhododendron campanulatum*; green synthesis; AgNPs; catalytic degradation; malachite green; acridine orange.

Introduction

In the 21st century, the use of nanotechnology (Sati et.al., 2020a; Ravichandran et.al., 2016) is playing a vital role in the field of chemical sustainability by using the various type of stabilizing agents such as plant material, fungi, algae etc. in the synthesis procedure. The green synthesis of nanomaterial is a new era of science and technology for the development of novel material due to its easy approach and compatibility with nature, which is the requirement of present scenario. Nowadays, green synthesized nanomaterials are using as a toxic chemical remover, water purifying agents, nano-biosensors, nano-medicines, detoxifying agents, and many more (Naginov et.al., 2009; Maier et.al., 2001; Anker et.al., 2010; Arvizo et.al., 2012; Bhattarai et.al., 2018). Green mediated nanomaterial from plants, replace the toxic chemical reactants (Calderon et.al., 2020)

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Ultrasonic Parameters of Some Ternary Liquid Mixture

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Abstract: At different composition and frequeny ultrasonic velocity has been measured in some ternary liquid mixtures at room temperature with the help of ultrasonic interferometer. Composition and frequency dependent variation of relaxation time (τ) have been shown in Figs. And analyzed for these ternary liquid mixtures.

Keywords: Ultrasonic wave velocity, Ultrasonic attenuation, Relaxation time, Ternary liquid mixture.

Introduction

Measurement of ultrasonic velocity (Lopez et.al. 2013; Papari et.al. 2013; Rathnam et.al.2012; Sahin et.al. 2011) has been adequately employed in understanding the molecular interaction sinpure, binary,and higher order multi-component liquid mixtures. The propagation of ultrasonic velocity in a medium is a thermodynamic property and has come to be recognized as a very specific and unique tool for predicting and estimating various physio-chemical properties of the systems under consideration (Dey et.al. 2014; Bhatt et al 2020).

For the measurement of intrinsic viscosity, polynomial relations have been suggested by various investigators (Singh et al 1981) A correlation between the Huggins coefficients and the constant describing the solvated part has been reported (Semwal et.al. 2003, Semwal et al 2015).

Ultrasonic investigations of liquid mixtures consisting of polar and non-polar components are of considerable importance in understanding intermolecular interactions between the component molecules and they found applications in several industrial and technological processes (Mehra and Israni 2001)). A survey of literature reveals that the studies for the mixtures of normal alcohols with few normal chain hydrocarbons like hexane, heptanes and aromatic hydrocarbon like benzene and toluene have been done but no attempt have been made to study the various ultrasonic and thermodynamic properties for binary liquid mixture of heptadecane and butanol at various temperature.

In the present study we summarize our observations on ternary liquid mixtures. Relaxation time have been calculated at different frequency and different concentrations at room temperature, using the measured values of ultrasonic velocity, viscosity and density. There results thus obtained have been shown in Tables

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Density, Viscosity and Ultrasonic Velocity of Polyethylene Glycol

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Abstract: Ultrasonic velocity, density, and viscosity of polyethylene glycol have been measured for the solution in water at concentration range of 0.3% to 1% at temperature 50°C. Ultrasonic velocity has been measured using ultrasonic interferometer at 1MHz frequency. By using the values of ultrasonic velocity, density, and viscosity, various acoustical parameters like adiabatic compressibility, acoustic impedance, intermolecular free length, and relaxation time have been calculated. The change in these acoustical parameters is explained in terms of solute-solvent interaction in a polymer solution.

Keywords: Density, Viscosity, Ultrasonic Velocity, Pplyethylene Glycol

Introduction

In recent years, ultrasonic velocity measurement has been employed in understanding the molecular interaction in pure liquids and liquid mixtures. The ultrasonic velocity measurements are very useful to provide information about strength of molecular interaction and physical nature of solute and solvents (Mehta and Chauhan 1997, Dewan et al 1991). Ultrasonic velocity of a liquid is fundamentally related to the binding forces between the atoms of the molecules and has been adequately employed in understanding the nature of molecular interaction in pure liquids(Tabhane 1983, Srinivasalu and Naidu Ranachandra 1991, Kannappan and Rajendran 1991).Polyethyleneglycol finds enormous use in the field of microbiology, biochemistry, drug delivery, gas chromatography and pharmaceutical industry (Nagara and Yamamoto 2008, Pittini et al 2008). Polymer dissolution also plays a key role in many industrial applications in variety of areas and an understanding of the dissolution process allows for the optimization of design and processing conditions as well as selection of suitable solvents. Aqueous solutions play a vital role for many geological processes in various environments, such as geothermal and magmatic hydrothermal settings. Subramanian Ravichandran et al. (2011) studied the

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Temperature Dependent Dielectric Properties of $PB[(MG_{1/3}NB_{2/3})_{1-X}TI_X]O_3$ for X= 0.25 Prepared By Solid State Reaction Method

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Abstract: Relaxor ferroelectric 0.75PMN-0.25PT was synthesized by two-step solid state reaction method via columbite route. The final mixed and grinded compositions was calcined at 920°C for 2h and then sintered at 1200°C for 6h. The XRD data show the perovskite phase of prepared material with reduced pyrochlore phase and the SEM micrographs shows the compact and dense grains. The dielectric measurement shows the temperature dependent nature having dielectric constant 13189.44 at Curie temperature (T_c).

Keywords: Relaxors, Perovskite, Calcination, Sintering, Dielectric Constant, Piezoelectric Coefficient.

Introduction

Lead based relaxor ferroelectric materials are very important materials for wide area of scientific and industrial uses. They have excellent Dielectric and Piezoelectric properties and possess a specific nature called diffused phase transition as compare to other ABO_3 type ferroelectric materials. That's why these types of materials are widely used in various applications such as multi-layer capacitors, mechanical actuators, biomedical transducers etc. (Lejeune and Boilot, 1986; Uchino, 1991). Therefore these ferroelectrics have wide scientific and industrial importance. The Lead based relaxor ferroelectrics generally have $A(B_1B_2)O_3$ type crystal structure, where B_1 is divalent or trivalent metal ion like Mg^{2+}, Ni^{2+}, Fe^{3+}, Sc^{3+} and B_2 is pentavalent metal ion like Ta^{5+}, Nb^{5+}, etc. (Sun and Cao, 2014; Luo et al. 2012). Lead Magnesium Niobate (PMN) is a well know relaxor ferroelectric material having very high value of dielectric constant (Ɛ) at its transition temperature and shows diffused phase transition (DPT) behavior. The transition temperature shifts up from -10°C in pure Lead Magnesium Niobate to 40°C in 0.9PMN-0.1PT, at applying electric field of frequency 100 Hz (Zhang et al. 1998). PMN-PT is a solid solution of Lead Magnesium Niobate (PMN) and Lead Titanate (PT) in stoichiometric proportion i.e. $(1-x)PbMg_{1/3}Nb_{2/3}O_3$- $xPbTiO_3$ where x exists between 0 to 1. The properties of composition $(1-x)Pb(Mg_{1/3}Nb_{2/3})O_3$-

129.	Prof (Dr) S.C Nautiyal	

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Evaluation of Antioxidant Activity of Synthesized Silver Nanoparticles from *Citrus Aurantium* Peels Extract by Using the Green Method

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Abstract: The substance which avoids oxidant of easily oxidizing substance even at low concentration is called antioxidant when antioxidant reacts with reactive oxygen species (ROS) or reactive nitrogen species (RNS) they often convert themself into antioxidant radical. Although such a radical has a reduced ability to react with imperative cellular targets, it can still cause damage. To decrease reactivity and reduction potential further down, the 'antioxidant radical' react with another antioxidant and this reaction continues in a stepwise manner until antioxidant radical' is no longer damage the cells like lipids, protein, DNA, and other important cellular molecules. In this research article, we had scanned our previously synthesized silver nanoparticles from *Citrus aurantium* peels extracts; Synthesis and characterization part of the research work is already in communication we are extending our research work on previously synthesized silver nanoparticles. In this research article, we had scanned the antioxidant activity of synthesized AgNPs was determined by H_2O_2 free radical scavenging activity, we obtained antioxidant activity of BHT with IC_{50} Value 65.52 µg/mL and antioxidant activity of synthesized AgNPs with IC_{50} Value 93.92 µg/mL. Antioxidant activity of synthesized AgNPs was also determined by DPPH free radical scavenging activity. We obtained antioxidant activity of BHT with IC_{50} Value 65.99 µg/mL and antioxidant activity of synthesized AgNPs with IC_{50} Value 99.68 µg/mL.

Keywords: Green method; Silver nanoparticle; Antioxidant activity; *Citrus aurantium*.

Introduction

Nobel metal nanoparticles especially silver nanoparticles have got great consideration in various fields of science and technology, due to its excellent utilization in various fields such as antimicrobial potential, environment remedy, chemical industry, photo-catalyst, drug delivery, and as biosensors (Wang et.al; 1991, Subbiah et.al; 2010). Additionally silver nanoparticles have several pharmacological applications like as antibacterial activity, anti-plasmodial activity, antifungal activity, anticancer, antiviral activity and antioxidant activity (Kuppusamy, et.al; 2016). In past few years antioxidant activity of silver nanoparticles is quite interesting to research topic for the scientific community due to their application in managing degenerative diseases.

Antioxidant agents which may be enzymatic or non-enzymatic materials regulate free radical,

130.	Prof (Dr) S.C Nautiyal	

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Acoustical Parameters of Polyvinyl Alcohol

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Abstract
Ultrasonic investigation provides a wealth of information in understanding the intermolecular interaction of solute and solvent. An attempt has been made to measure density, viscosity and ultrasonic velocity of aqueous solution of polyvinyl alcohol of molecular weight approximately 140,000 at different temperatures 35°C, 40°C, 45°C, 50°C, 55°C, 60°C, 65°C at 0.8% concentration. Ultrasonic velocity is measured using ultrasonic interferometer at 1 MHz frequency. The acoustical parameters like, adiabatic compressibility, acoustic impedance, intermolecular free length and relaxation time have been calculated at different temperatures. These parameters were used to understand the behaviour of solute and solvent.

Introduction

Ultrasonic studies provide a wide range of information in understanding the molecular behaviour and intermolecular interaction of polymer solvent mixtures. This technique has been used extensively used to determine ion-solvent interactions in aqueous solution containing electrolytes or non electrolytes. Ultrasonic studies in polymeric solutions have drawn the attention of many researchers in the recent years (Sreenath et.al. 2012, Praharaj 2013, Nagarjun 2013, Godhani 2017). A survey of literature (Jacobson 1952, Lageman and Dunbar 1945, Kannappan 2007) indicates that acoustical parameters are useful in understanding the nature and strength of molecular interactions in the liquid mixtures and solutions. They also provide information about the process involving polymer production and their applications (Beth and Jack 2003). Polymer dissolution plays a important role in many industrial uses in a variety of application areas (Selvakumar and Bhat 2008). M. Vigneswari et al. (Vigneswari et.al. 2016) studied the molecular interactions in solutions of polyvinyl alcohol, they reported the strong solute and solvent interactions in aqueous solution of polyvinyl alcohol. Ultrasonic velocity measurements were reported for aqueous solution. They have suggested the presence of solute solvent interactions. Kavitha et al. (2012) studied the molecular interactions in aqueous solution of ternary mixture in polyvinyl alcohol. Ravichandran and Ramnathan. (2012) have

131.	Prof (Dr) S.C Nautiyal	
132.	Dr. Dharmendra Rathod	

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Presence of Radionuclide Concentrations in Himalayan Region of Uttarakhand, India- A Review

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Abstract: Earth is a major source of several elements which are occurring with different physical and chemical properties in nature. Some of the elements are categorized as Naturally Occurring Radioactive Materials and termed as NORMs. These natural sources and anthropogenic sources combined make the earth's environment radioactive and human beings continuously receive the amount of the total radiation dose more than 50% of the radiation that comes from radon and thoron. It has been evident that soil is the furthermost important feature that affects the radon/thoron level in the human living surroundings which increases human exposure to radioactivity. The concentration of natural radionuclides elements present in soil or rocks is the main feature of levels of natural background radiation dose. This review paper represents the activity level of Ra-226, Th-232, and K-40 in soil samples of the Himalayas region of Uttarakhand. The data so obtained from previous studies of radionuclides shows the high abundance of radioactive mineralization in the soil of the Himalayan region in the Uttarakhand state of India.
Keywords: Soil, Radionuclides, Ra-226, Th-232 and K-40, Gamma Ray Spectroscope

Introduction

Earth is made up of a variety of elements, each with its own set of physical and chemical properties, and some of them are radioactive elements (Krebs, 2006; Yadav et al., 2015). The earth's atmosphere is radioactive due to natural and human-made causes (Al-Khawlany et al., 2018). The toxicity due to radioactivity is a very natural occurrence all over the world for the Human. Important causes of radiation exposure include the presence of radon (Rn-222) and thoron (Rn-220) in the human atmosphere (Kaur et al., 2019). Radiation from radon and thoron accounts for more than half (50%) of the overall exposure received from humans and up to 70% of the global contamination caused by natural sources of radiation that contributes to substantial radiological research in order to estimate the effect on living being (UNSCEAR, 2000).

Rn-222 and Rn-220 are noble radioactive gases and are found as a daughter radioactive element of the U-238 and Th-232 decay sequence, which disintegrates into the stable product like Pb-206 and Pb-208, respectively, and are abundantly present in rocks/soil (Alnour et al., 2012) Fig.1 (a) and (b). The energy of alpha particles emitted during the disintegration of the U-238 and Th-232 is harmful to the human tissue and caused health

133.	Dr. Shashibala Uniyal	

Ensuring Health and Nutritional Security Through Nutri-Sensitive Agriculture During Pandemic

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INTRODUCTION :

The COVID-19 pandemic that has spread rapidly and extensively around the world since late 2019 has had profound implications for food security and nutrition. The coronavirus pandemic has seriously challenged more than our health. Food security and the livelihoods of millions of people have been compromised, and many more millions are likely to be hungry because of the pandemic's impact on economies. The UN World Food Programme has estimated that COVID-19 will increase the number of people facing acute food insecurity around the world – up to 265 million in 2020, up by 130 million. We can only stop this by taking swift action today.

This will also mean a rise in malnutrition among children and overall threat to achieving the Sustainable Development Goals. This is a pandemic emergency that no one was prepared for; some experts have even said the virus is here to stay. Governments around the world will need to step up investments to deal with this crisis, and exhibit solidarity to prepare and adapt for future challenges.

HOW COVID-19 IS AFFECTING FOOD SECURITY AND NUTRITION :

COVID-19 is a respiratory illness and there is no evidence that food itself is a vector of its transmission. However, the virus, and measures to contain its spread, have had profound implications for food security, nutrition and food systems. At the same time, malnutrition (including obesity) increases vulnerability to COVID-19. Initial and ongoing uncertainty surrounding the nature of the spread of COVID-19 led to the implementation of strict lockdown and physical distancing policies in a number of countries

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134.	Mrs. Rashmi Nautiyal	

MODERN APPROACHES FOR TEACHING, LEARNING AND EVALUATION IN COMMERCE

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Abstract

Teaching, learning and evaluation are the main back bones of education system. These are the various process which creates interest among the students in class room. Earlier teaching, learning and evaluation was one way process, but now these processes are mutual dependent. Teacher and student both take part in the all three processes. Technological changes have made change in higher education also. Now a day's lot of technological tools are available which makes teaching, learning and evaluation more effective. Commerce is a versatile subject, there is an inclusion of other subjects also. Management and economics are the main subjects which have merged with commerce up to some extent. So any change in these subjects will automatically change the syllabus of commerce also. Due to the global changes, lot of changes have also come in the scope of commerce. Now it is difficult to create students interest without incorporating novelty in the teaching, learning and evaluation process. This paper suggests the innovative teaching, learning and evaluation methods that can be used in imparting the knowledge of commerce to the students.

Key Words: - Teaching, learning, evaluation, technological tools.

Introduction: Teaching, learning and evaluation are the basic functions in the education system. These are those process which creates interest among the students in class room. Though teaching, learning and evaluation were always there from the beginning of education system, but with the change in society and technology, these processes also change. Earlier teaching, learning and evaluation was considered to be one way process, teacher will broadcast and student will learn, evaluation was by oral and written examination only. But now these processes are mutual dependent, teacher and student both take part in the all three processes. In every process there is feedback system which provides exact effect on all these three process. If any modification is required,the same can be incorporated to make class room environment more interesting for both teacher and students.

Education is an engine for the growth and progress of any society. It not only imparts knowledge, skills and inculcates values, but is also responsible for building human capital which breeds, drives and sets technological innovation and economic growth **(K. G. Licy and P. V. Jeseni, 2018).**Technological changes have made change in higher education also. Now a day's lot of technological tools are available which help teacher in higher education to make teaching more effective. These tools are also creating interest among students. Study materials are now available through various sources, like in class room by projector, 3D models, animations etc. Learning through these techniques remains for long time, because student visualise more effectively. Technological changes have make evaluation process of higher education more accurate and transparent. Students can give online exams and evaluation process is also automatic.

Commerce is a versatile subject, there are inclusion of other subjects also. Management and economics are the main subjects which have merged with commerce up to some extent. So any change in these subjects will automatically change the syllabus of commerce. Due to the global

135.	Dr. Dharmendra Rathod	

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Histopathological Studies On The Liver Of Rats Exposed With Toluene And Trichloroethylene Pre-Treated With Phenobarbital

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Abstract: In rats, the effect of phenobarbital Pre-treatment on the toxicity of a variety of halogenated organic solvent has been investigated. The current findings show that Phenobarbital pre- treatment significantly reduces the toxicity of toluene and trichloroethylene. Our observations Show that toluene is more hepatotoxic than trichloroethylene. It causes peculiar ultra-structural changes i.e. involution of nuclear membrane and irregular arrangement of mitochondrial cristae. However, using single high- dose levels of these solvents, a potentiating impact of Phenobarbital on the toxicity of other organic solvents such as methanol, xylene, and methylene chloridecould not be demonstrated. Because barbiturates are commonly used by industrial workers, it's crucial to be aware of the possibility of synergistic effect from inhaling of organic solvents, as well as of potentiation associated with others.

Keywords: Toluene, Trichloroethylene, Phenobarbital, Hepatotoxic, Organic solvents

Introduction

Organic solvents, often known as carbon-based solvents, are distinguished by their colour, volatility, molecular weight and boiling point. These solvents are frequently used in various industries and day to day products, thus making them a potential toxic threat. Knowing about their hazardous effects on human health and to the environment is a must to take appropriate corrective measures. The lipophilic nature of organic solvents promotes their absorption immediately after inhalation or oral exposure and dermal contact (Firestone, et al 2009). Once the solvent is absorbed, exposure route, solvents physical and chemical nature affects the metabolism shorter and longer deposition. This metabolism can occur immediately in the liver, without even entering the systematic circulation. Some of these solvents are metabolized to less toxic components while others yield severely toxic metabolites. The un-metabolized solvents are dispersed largely in adipose tissue resulting in long term effects on human body.

Hepatotoxicity or liver damage is defined as the irregular functioning of liver due to chemicals. Drugs induced hepatotoxicity adversely affects structure of Mitochondria and its function. These drugs can cause severe damage to the Mitochondria and can induce hepatic necrosis. This may cause cytolytic hepatitis and can even progresses into liver failure. (Jain, etal 2010)

Quite a few important metabolic functions are regulated by the liver. It is the key organ of metabolism and excretion. Any Hepatic injury is associated with distortion of these metabolic functions (Wolf 1999). Liver strategic placement in the body subjects it to continuous exposure to varied xenobiotic substances. The toxins absorbed from the intestinal tract have an easy access to the liver resulting in its various ailments. Thus in spite of medical advancements,

136.	Dr. Sarita Tiwari	

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जनमत निर्माण में सोशल मीडिया की भूमिका

डॉ0सरिता तिवारी

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शासन व्यवस्था का कोई रूप हो जनमत का महत्व सभी में रहा है। चाहे राजतंत्रात्मक व्यवस्था हो या अधिनायकवादी,कुलीनतंत्रात्मक हो या लोकतंत्रात्मक। कारण शासन के इन सभी रूपों में स्थिरता व वैधता तभी आ सकती है ,जब इनको जनता का भरोसा प्राप्त हो। कौटिल्य ने अपने ग्रन्थ अर्थशास्त्र में राजा को गुप्तचर रखने का सुझाव ही इसलिए दिया ताकि वह जनमत का पता लगा सके। इसी प्रकार गोएबल्स ने नाजी जर्मनी में हिटलर के अधिनायकत्व को वैधता और स्थिरता दिलाने के लिए जिस प्रचार का सहारा लिया वह भी जनमत के महत्व को दर्शाता है।

लेकिन लोकतंत्र में जनमत का प्रभाव और महत्व सर्वाधिक है क्योंकि ये जनता का और जनता के लिए शासन है। जनमत लोकतंत्र का प्राण है। बेनी प्रसाद के शब्दों में , जनमत तभी उचित जनमत कहा जाता है जबकि वह सम्पूर्ण समाज कल्याण के लिए प्रेरित करता है। 1 जनमत निर्माण के बहुत सारे साधन है यथा– मानव तत्व,राजनीतिक दल,चर्चा व गप्प,समाचार–पत्र,टीवी,रेडियो,सिनेमा,सार्वजनिक सभाएं,शिक्षण संस्थाएं,व्यवस्थापिका सभाएं आदि।

ये सारे परम्परागत साधन है इन्ही में नया माध्यम है सोशल मीडिया। सोशल मीडिया का उभार मुख्यधारा के मीडिया के विकल्प के रूप में बड़ी तेजी से अपना विस्तार कर रहा है और जनमत निर्माण में बड़ी भूमिका निभा रहा है। प्रश्न ये है कि इसके विस्तार का कारण क्या है और कैसे ये जनमत के निर्माण में अग्रणी बनने का प्रयास कर रहा है। नेटिजन्स की बड़ी संख्या इसकी प्रशंसक है। इसका सीधा सा उत्तर है ,मुख्यधारा की मीडिया का स्वतंत्र और निष्पक्ष न रह पाना। भारत में मीडिया का जो स्वरूप है ,वह किसी भी लोकतांत्रिक देश के लिए चिन्ता का विषय है। आम आदमी की चिन्ता और उसकी समस्याओं पर बात करने के बजाय आज मीडिया सेलिब्रिटीज के इर्द–गिर्द या बेतुकी बातों को अधिक तूल दे रहा है।कॉरपोरेट घरानों के आधिपत्य और टीआरपी के खेल ने इसके वास्तविक स्वरूप को दूषित कर दिया है। लोकतांत्रिक मूल्यों पर ये सीधा आघात है।

कभी स्वतंत्रता आन्दोलन में अग्रणी भूमिका निभाने वाला मीडिया और स्वतंत्रता के पश्चात् भी लोकहित कारी कार्यकमों को बढ़ावा देने तथा आम जनता को जागरूक करने का कार्य करने

137.	Dr. Anita Chauhan	

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ROLE OF WOMEN IN INDIA'S ECONOMIC AND SOCIAL DEVELOPMENT

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ABSTRACT

Economic growth and women's empowerment go hand in hand; on the one hand, growth by itself can significantly reduce gender disparity; on the other, growth may be aided by the empowerment of women. Women are typically not seen as being essential to the process of economic growth in development strategies and initiatives. This is demonstrated by the larger investments made, mostly in population programmes, on women's reproductive duties as opposed to their productive ones. Yet In the underdeveloped world, women work and are paid for their economic productivity. Their main industries of employment include agriculture, the informal economy, and increasingly, formal wage jobs. However, their incomes are typically meagre. Since the 1950s, development organisations have reacted to the need for disadvantaged women to have a source of income by investing only modest sums of money in initiatives that generate revenue. Such initiatives frequently fall short because they are driven by welfare concerns rather than development issues and provide women with temporary and part-time work in traditionally feminine professions like knitting and sewing, which have small markets. In contrast, some nongovernmental organisations have been successful in improving women's economic status over the past 20 years because they began with the premise that women are essential to the process of economic development. One such organisation is the Self-Employed Women's Association in India.

Key Words: *Population Programs, informal sector, development*

INTRODUCTION:

The problem of "missing women" is a jarring reminder of the fact that gender inequality still exists in our society. According to the World Bank (2011), it is estimated that 6 million women vanish from the face of the earth each year. Twenty-three percent of them do not live to see their first birthday, ten percent vanish during their formative years, twenty-one percent vanish during their reproductive years, and thirty-eight percent are above the age of sixty. There are far more women than men who are deprived of the opportunities for education, work, or political power that they would have had if they had been born a man for every single woman who is no longer alive. It is clear, in a number of different realms, that women are still subject to a greater degree of deprivation than they were twenty years ago, despite the fact that there has been some progress in this direction. In 2010, the enrolment rate for girls in secondary schools in low- and middle-income countries was 34 percent, while the enrolment rate for boys was 41 percent. This disparity is due to the fact that more boys enrol in secondary schools than girls.

138.	Dr. Ashutosh Mishra	

साहित्य-अभियान

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राष्ट्रकवि गुप्त कृत भारत भारती का दिव्य संदेश : सफलता की आधार भूमि शिक्षा

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राष्ट्रीय काव्यधारा के कवियों में मैथिली शरण गुप्त का नाम परम श्रद्धा से लिया जाता है। उनकी रचनाओं में मानवतावाद का अनुप्रेरक भाव सुनाई देता है। जन-मन को प्रेरित करनेवाला वसुधैव कुटुंबकम् का भाव आपकी कविता की पहचान है। वे देश के हर कोने में हरियाली और हर आँगन में खुशियों का साम्राज्य देखना चाहते हैं। वे धरती पर अलौकिक ही नहीं स्वर्गिक परिवेश निर्माण करने वाले वीणापाणि सरस्वती के उपासक हैं। यह तथ्य इनकी रचना 'साकेत' में स्पष्ट रूप में सामने आया है–

"मैं यहाँ नहीं संदेश स्वर्ग का लाया।
इस भूतल को ही स्वर्ग बनाने आया।"[1]

भारत-भारती की रचना 1912 में हुई। उस समय देश अंग्रेजी साम्राज्य में साँस ले रहा था। अंग्रेजी शासन में शिक्षा कितनी दुर्लभ रही होगी, जब मन के भाव प्रकट करने अर्थात् बोलने का अधिकार भी नहीं था।

गुप्त जी ने भारतीयों को मानसिक रूप से चिंतनशील बनाने का सतत प्रयास किया है। उन्होंने भारत भारती के प्रारंभ में उठ खड़े होने का आह्वान किया है–

"मानस भवन में आर्यजन जिसकी उतारें आरती।
भगवान भारतवर्ष में गूँजे हमारी भारती।।"[2]

गुप्त जी का दृढ़ विश्वास रहा है देश में जन-जागरण के लिए शिक्षा अनिवार्य है। यह भी सुनिश्चित है कि मनुष्य शिक्षित हो अनुकूल चिंतन कर दृढ़ संकल्प के साथ कर्मपथ पर गतिशील रहता है।

शिक्षा की अपेक्षा

पतनोन्मुख समाज के लिए शिक्षा अंधे के लिए लकड़ी के समान है। हमारी प्राचीन शिक्षा-प्रणाली जीवन संग्राम में विजय पाने के उपयुक्त रही है। परंतु वर्तमान शिक्षा-प्रणाली युगीन परिस्थितियों के अनूकूल नहीं थी। शिक्षा के स्तर में गिरावट आ गई थी। बहुत कम व्यक्ति ही पढ़-लिख पाते थे, तथा पढ़-लिखकर वे क्लर्क के पद तक ही पहुँच पाते थे।

139. Dr. Ashutosh Mishra

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रामचरितमानस की विचलन विलक्षणता

डॉ. आशुतोष मिश्र
संतोष नगर, कनखल, हरिद्वार (उत्तराखंड)

विचलन का शाब्दिक अर्थ है नियम, निर्धारित सिद्धांत, मार्ग या बंधन से अलग नवीन मार्ग का अनुसरण करना। भाषायी विचलन में भाषा के सिद्धांत को छोड़कर सृजन करना शैली को विचलन कहा जाता है। काव्य भाषा का स्वरूप गद्य से पर्याप्त भिन्न होता है। काव्य भाषा में विचलन का बहुआयामी रूप मिलता है।

विचलन को परिभाषित करते हुए डॉ. सत्यदेव चौधरी ने लिखा है–"रचयिता जब अपने काव्य में किसी एक अंश को विशेष रूप से उभरना या विपमित भाषा का काव्य भाषा माना है।"

डॉ. भोलानाथ तिवारी ने विचलन के स्वरूप को स्पष्ट करते हुए लिखा है–"सामान्य भाषा के नियम, बंधन, चलना अथवा पथ को छोड़कर नए का अनुसरण करना, नए पथ पर चलना ही विचलन है। पश्चिम में पोमटिक लाइसेंस (कवि द्वारा ली गई छूट) अथवा संस्कृत का प्रसिद्ध कथन "निरंकुशः कवयः" (कवि निरंकुश होता है)। इसी विचलन की ओर संकेत करता है। भारतीय काव्यशास्त्र के वक्रोक्ति संप्रदाय की वक्रोक्ति की यही है। काव्यभाषा की मुक्ति असामान्य अथवा वक्र होती है। पश्चिम सौंदर्यशास्त्र तथा शैलीविज्ञान में बहु-प्रयुक्त फोरग्राउंडिंग" शब्द भी इसी ओर संकेत करता है।"[2]

डॉ. नरेश मिश्र ने विचलन को रेखांकित करते हुए अपना विचार इस प्रकार व्यक्त किया है, "मानक भाषा के सामान्य पक्ष से हटकर किया जाने वाला प्रयोग विचलन कहलाता है। विचलन साहित्यिक भाषा की प्रमुख विशेषता है, जो सामान्य भाषा से अलग करती है।"[3]

विचलन का सर्वाधिक प्रभावी रूप काव्य भाषा में सामने आता है। विचलन की प्रक्रिया सहज और सामास दोनों प्रकार से होती है। जब साहित्यकार भाषा में काव्यात्मक रूप प्रयोग के साथ भावात्मक गंभीरता लाना चाहता है, तो सहज रूप में विचलन उभर आता है, क्योंकि गद्य भाषा में व्याकरण का सैद्धांतिक प्रयोग होता है। काव्य भाषा में लयात्मकता के लिए गद्यभाषा के वाक्य के कर्ता, कर्म और क्रिया के क्रमशः प्रयोग को विचलन के रूप में अपनाया जाता है; यथा–

'बेदउ गुरु पद पदुम पएगा।'

यहाँ क्रिया पर वंदउ' वाक्य के अंत में गद्य के सैद्धांतिक रूप से प्रयोग होना था, किंतु काव्य भाषा में वाक्य के आदि में प्रयोग किया गया है।

तुलसीदास कालजयी रचनाकार हैं। इनकी रचनाओं में मटाकाव्य 'रामचरितमानस को सर्वश्रेष्ठ स्थान प्राप्त है। हिंदी का सर्वोतम अनुप्रेरक महाकाव्य विश्व साहित्य का चर्चित ग्रंथ है। भारवर्ष के ही नहीं ट्रिनीडाड, गयाना, शूरीनाम, मारीशस, फिजी, कनाडा और अमेरिका आदि देशों में रह रहे प्रवासी भारतीय इसे जीवन के पथ-प्रदर्शक