

STUDIES ON BIRD AND FISH ASSEMBLAGE IN DAROJI LAKE, BALLARI, KARNATAKA

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Abstract

A study was carried out to record the bird species in Daroji Lake near Sandur, Ballari District, Karnataka. In the present study a total of 34 birds were identified and classified to ten orders and 24 families. Among them Ardeidae and Scolopacidae were found to be the highest composition (11 %) followed by Anatidae, Charadriidae, Jacanidae, Laridae, Ciconiidae and Rallidae with 6 % each and others were found to be 3 %. Among fishes population, *Catla catla*, *Mrigal*, *labeo* spp., *Tilapia*, *Channa punctatus* and low valued fishes like *Glossogobius giuris*, *Mystes*, *Xenentodon cuneata*, *Garra* sp., *Parambassis ranga*, *Hyporhamphus xanthopterus*, *Gambusia*, were recorded during the study. Though the lake does not provide nesting and roosting place directly, it was found that the visitation of these birds is directly correlated with the availability enormous fishes as food items.

Key words: wetlands, charadriiformes, carps, Daroji lake

Introduction

Wetlands are habitats for many number fauna and flora around the world. These are distinct ecosystems with specific functional characteristics and economical values. However, they are also ecologically sensitive and adaptive systems (Turner *et al.*, 2000). In India, wetland ecosystems are distributed in different geographical regions ranging from extreme north to south. According to the Directory of Indian Wetlands 1993 (WWF and AWB, 1993), the areal spread of wetlands was around 58.3 m ha. As mentioned in Space Applications Centre (SAC) National Wetland Atlas (2011), 201,503 wetlands were identified and mapped in India. These wetlands are considered to be a vital part of hydrological cycle and are highly productive systems which supports large biological diversity and provide a wide array of ecosystem goods and services including irrigation, domestic water supply, freshwater fisheries and water for recreation (Wetlands Rules, 2010). Different types of wetlands provide important breeding sites for wildlife and provide a refuge for several migratory birds. According to Agarwal (2011) approximately between 1200 and 1300 number of species of migratory birds recorded from India. In wetlands, aquatic bird communities have been demonstrated to be influenced by their environment factors like water availability and their physical-chemical properties. Assemblage of birds and their composition can also be influenced by local ecological interactions such as food and predation. Wetland

Avifaunal Studies on Magadi Lake, Shirahatti (T), Gadag (Dt), Karnataka, India

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Abstract The present study was conducted on the avifaunal diversity of Magadi lake, Shirahatti (T), Gadag (Dt), Karnataka. The study revealed that the study area inhabiting several local and migratory bird species. The Magadi wetland attracts every year more than 100 species of wetland birds which includes both local and migratory. Highest population of Bar-headed geese, Demoiselle cranes, Ruddy shelduck, Herons, Coots, Grebes, Painted stork (NT), Cormorants, Waders, Black winged stilt, Black tailed godwit, Sand pipers, Ibis were registered during the study. The hitherto study also revealed that the family Anatidae contributed highest percent (74.04%) and dominated the entire lake by Bar headed geese. The remaining families occupied further ranks with 2.73% to 0.5%. The wetland is facing shortage of rainfall, anthropogenic pressures, siltation, reduction in storage of water.

Keywords Bar headed geese, Demoiselle crane, Wetland birds, Migratory birds, Threatened species.

Introduction

Migration is either regular or seasonal movement which takes place in response to changes in food availability, habitat and weather conditions. Migration is marked by the annual seasonality (Peter et al. 2001). Non-migratory birds are said to be resident or sedentary. Approximately 1800 species of the world's 10,000 bird species are long distance migrants (Seckerioglu 2007, Rolland et al. 2014).

Wetlands are defined as areas of marsh, fen and peat land or water, whether natural or artificial, permanent or temporary with water that is static or slightly flowing fresh, brackish or salt, including areas of marine water, the depth of which does not exceed 6 meter (Hosetti 2002). Wetlands constitute a treasure of living community, birds inhabiting wetlands for feeding, breeding, nesting or roosting are called as wetland birds (Paramesh and Gupta 2013) which comprises birds groups like water fowl and waders. Kattan and Franco (2004) opined that monitoring of wetland birds provides valuable information on the ecological health and status of wetlands and can be a vital tool for developing wetlands. The importance of local landscapes for conservation of avifauna can only be understood by knowing the structure of the bird community of that region.

The abundance of wetlands in South Asia is declining due to anthropogenic pressures which can greatly influence the structure of the bird and decline in several water bird populations (Bird Life International 2004). Hence it is an important factor to understand and control the underlying causes in order to prevent the loss of key components of the

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Add- On courses As Co-Curricular Activities In Non-Conventional Education System

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Abstract

Present curriculum needs frequent change in order to meet the recruiter's requirement in terms of employability. Employer's requirement changes from time to time. In such cases it is very difficult to meet such a dynamic requirement from the present pool of Add- On courses available with university. To add new courses may be difficult and time consuming in the existing pool of papers of university. After understanding the stake holder's requirement, at college level Add- On courses in functional areas and as ability enhancement ranging from two to six credits were designed and few courses were added in collaboration with IIT Mumbai through distance learning for MOOC. The intended output is quality enhancement for employability and of entrepreneurship.

Introduction:

India is one of the largest education systems in the world. As of February 2017, there are 789 universities, 37,204 colleges and 11,443 stand-alone institutions in India, as per the latest statistics from the UGC website (2017). In spite of so many universities not a single university is appearing in first top 100 world university list.

The current population of India is 1,372,159,001 as of Tuesday, December 3, 2019, based on Worldometers elaboration of the latest United Nations data. India 2019 population is estimated at 1,366,417,754 people at midyear according to UN data. India population is equivalent to 17.71% of the total world population. The population density of India in 2011 was 382 per sq km and gone upto 416 people per square kilometer during 2019. The country has doubled in size in just 40 years, and is expected to unseat China as the world's most populated country in the next couple of decades. India's current yearly growth rate is 1.02%, worldpopulationreview.com (2019).

With increasing population, there is exponential growth of related problems. One of the major problems is providing education to everyone, as much of the population is in the category of Young. By and large about 70 % is rural population and 30% is urban population. During last two decades there is large scale denudation of rural population and adding to urban population in search of better jobs and education. Though, education is fundamental right of every citizen, there is a large number of drop outs from school education system to Higher education system.

As per All India Survey on Higher Education (AISHE) 2017-18, the Gross Enrolment Ratio (GER) in higher education has increased from 24.5% in 2015-16 to 25.8% in 2017-18.

Tamil Nadu has highest GER in India at 46.9%. Even if India succeeds in its target of 30% GER by 2020, 100 million qualified students will still not have places at university. Since last seven decades higher education dwindling between Accessibility, Quality and Equity.

Objectives :

To study the acceptability of students in terms of for capacity building through -

- Add- On Courses in functional area of non conventional courses
- MOOC through distance mode
- To meet one of the NAAC requirement of in terms of Curricular Planning and Implementation

Study area : College of Non Conventional Vocational Courses (CNCVCW), Kolhapur

About College : In keeping with Government policy, Chh. Shahu Institute of Business Education and Research Trust has started College of Non-Conventional Vocational Courses for Women (CNCVCW) in 1994 for strengthening women empowerment by imparting Non-Conventional quality education at affordable cost. The vision of Dr. A. D. Shinde was to develop the intellectual capability of individuals to understand and appreciate

WATER QUALITY INDICES FOR PANCHAGANGA RIVER BASIN

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ABSTRACT

Main source of pollution of in the river basin is originating from the sugar industries and partially and untreated domestic sewage. Thirteen representative river water samples representing five rivers Panchanganga river basin were collected for winter season and analysed for various physical, chemical and microbiological parameters following standard procedures. Water Quality Indices (WQI) were calculated based on fourteen water quality parameters. WQI in the study area ranged between 49.01419 to 170.7974. Water quality indices indicated that coliforms are the a major polluting parameter amongst all other water quality parameters. This can mainly be attributed to faecal contamination of river water due non point source of pollution in the upper reaches of river basin and domestic waste water of Kolhapur city flowing through Jayanti Nalla. Water borne diseases such as typhoid, diarrhoea, dysentery and Jaundice are commonly found in the Panchanganga river basin area

KEY WORDS : Panchanganga river, Physio chemical parameters water quality index, Zoning

INTRODUCTION

Presently, India has 453 sugar mills constituting 252 mills from the Co-operative sector and 134 Mills from the private sector. At present there are 173 cooperative sugar factories in operation. Maharashtra accounts for 20% of sugar production in India behind Uttar Pradesh at 24%. 285 distilleries generate 40 billion litres effluent in a year. www.indianmirror.com (2020). Disposal of effluents from sugar and distillery into rivers is hazardous as it leads lowering river water pH, depletion of dissolved oxygen and soil health (Patil *et al.*, 1987). Discharge of effluents on the agriculture land favours accumulation of salts, unpleasant odour and depletion in agriculture output.

Study area

The study area of the Panchanganga river basin selected is bonded between latitude 16° 18' 00"N to 16° 50' 00" N and longitude 73° 50' 00" E to 74° 16' 6.42" E. The river system is constituted of five NE flowing rivers namely Bhogawati, Tulsi, Kasari,

Kumbhi and Dhamru. Panchanganag river basin has a catchment area in Radhanagari, gagan Bavada, Panhala and Karvertaluka of Kolhapur district. There are four sugar factories with distilleries namely Bhogawati S.S.K-Parete, Datta S.S.K Asurle-Porle (A unit of Dalmia Bharat Sugars and Industries Ltd.), Kumbhi-Kasari S.S.K, Kuditre and Kolhapur Sugar Mill, Kasaba Bawada, Kolhapur.

MATERIALS AND METHODS

Physico-chemical, biological parameters were analysed following Standard procedure APHA (2004). pH and electric conductivity were tested by using pH meter (Elico, PE 132), and conductivity meter (ElicoCM 335) respectively. Biochemical Oxygen Demand was determined at 27 °C for three days by using dilution method. Sulphate and Phosphate was analysed by Spectrometric method (UV-VIS) whereas Na & K was determined by Flame Photometer (Elico CL 22D). Total alkalinity, hardness, calcium Magnesium and chloride were analysed by titrimetric method and TDS by

PHYSICO-CHEMICAL CHARACTERISTICS OF SOIL OF PANCHANGANGA RIVER BASIN

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ABSTRACT

Continuous urbanization and industrialization have greatly increased the amount of waste generated through human activities. Most of the industries dispose the solid and liquid wastes into streams or on adjacent land. At the disposal sites the wastes interact with the soil through direct contact when the effluent is disposed on ground, and after transport and deposition when released into the water medium. Whether the soils retain or transmit the undesirable element of the effluents to the surrounding environment generally depends mostly on the characteristics of soil. Fifteen representative soil samples analyzed for physico-chemical, heavy metals and indicated that soils of the Panchanganga river basin are lateritic, deep black and coarse shallow soil in texture. Lateritic soils are acidic in nature and black cotton soils are saline in nature. The concentration of metals is according to the sequence $Fe > Mn > Zn > Cu > Pb > Ni > Co > Cd$. A comparison of these heavy metal concentrations with those in Global Shales suggests that the soils under study are unpolluted.

KEY WORDS: Panchanganga river basin, Physico-chemical characteristics, Heavy metals.

Review of Literature

Large amount of literature is available on this subject. However, in this chapter an attempt has been made to review only the most significant contributions.

The USDA (1953) classified the soil into three major groups based on pH, electrical conductivity and exchangeable sodium percentage (ESP) and this classification is given in Table 1.

Agrarwal and Yadav (1956) studied the relationship between pH, and ESP values and concluded that $pH_2 > 9.2$ corresponds to ESP values greater than 15. Seth (1967) classified soils into four groups on the basis of electrical conductivity of 1:2 soil water suspension as follows:

EC (mmho's/cm) Group :

<1.0	-	Normal
1.0 to 2.0	-	Tending to salin
2.0 to 3.0	-	Saline
> 3.0	-	Highly saline

Badrapur and Rao (1977) observed that the electrical conductivity and total concentration of ion

decreased with depth. The quality of groundwater governs the salinity of surface soils. Bhumbra (1977) studied the chemical composition of irrigation water and its effect on the crop growth and soil properties. A similar study was done by Sharma *et al.* (1981) and found that irrigating the crop with saline water reduced 50% crop yield at EC 16 mmho's/cm for wheat and at 6 mmho's/cm for maize, over a period of three to four years.

Rangaswamy and Krishnamurthy (1976) studied the influence of absorbed cations on plasticity, heat of wetting, specific surface and soil strength. The soils rich in calcium and magnesium are found to be very hard, with sodium rich soils moderately strong and the potassium-rich soils highly friable. The soils rich in steatite group of clay minerals become exceptionally hard when saturated with magnesium and become highly friable when saturated with potassium. Sharma and Gupta (1986) classified soils as normal ($pH_2 < 7.5$ or $pH_2 < 8.0$), saline ($pH_2 7.5$ to 8.5 of $pH_2 8.0$ to 9.0) and alkali ($pH_2 8.2$ to 10 or $pH_2 9$ to 10.8). The industrial waste from numerous sources

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Differential thermal analysis of soil from Panchanganga River Basin, Kolhapur

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ABSTRACT

Thermal behavior being one of the physical property of any material, it gives fair estimation of constituents, nature and usage of material. The traditionally adopted procedure for thermo gravimetry and calorimetry are tedious, time consuming and involve elaborate human intervention. In the thermal analyzing system, use of electronic sensors for the physical measurement increases the sensitivity, accuracy and ease of operation. Characterization of soil in the temperature range of 30 to 800 °C at 50 mv full scale in Differential Thermal Analysis indicated presence of Kaolinite, and Smectite group of clay minerals associated with Micas.

Key words : Differential Thermal Analysis, Kaolinite and Smectite, CEC, Endothermic and Exothermic, Peak temperature curves.

Study area

The Panchanganga river basin lies in the area bounded by latitude 16° 18' 00"N to 16° 50' 00" N and longitude 73° 50' 00" E to 74° 16' 6.42" E. The river basin has been carved out in basalt flows of the Deccan Volcanic Province. These rocks now form the valley side, hills and ridges within the basin. At higher altitudes they have been converted into laterites that contain pockets of bauxites. The soils derived from these rocks form a thin veneer on the valley floor. Because of the intensive weathering of parent rock and their transportation downstream, well developed alluvial deposits are formed on the banks of rivers. The thickness of the alluvial soil varies from 5 to 10m in the valley portions of the Panchanganga river basin. As shown in Fig.1, within the river basin, three types of soils can be demarcated. Black cotton soil is well developed in the north and north-western part of the basin and all

along the bank of the river Bhogawati. Reddish brown lateritic soil is well developed on the plateau in the western and central part of the basin. In the southern part of the Kolhapur city a thin layer of coarse soil is developed on weathered basalts.

Soil sampling

Fifteen representative soil samples were collected from cropland, from a depth of 10-15 cm. About 1.5 kg. of sample was collected in a polythene bag and dried in the laboratory before grinding and sieving. The samples were collected only once during the course of work. The location of these soil samples are shown in Fig.1.

Methodology

The soil samples were crushed and the clay fraction was separated by International Pipette Method as per the procedure given by Carver (1971).

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HYDRO-GEOLOGICAL SETTING AND IMPACT OF SUGAR INDUSTRY EFFLUENT ON QUALITY OF AQUIFERS OF PANCHAGANGA RIVER BASIN, KOLHAPUR, MAHARASHTRA

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ABSTRACT

Panchanganga river basin is dominated by basaltic rocks which are altered to laterite and bauxite at higher altitudes and black cotton soil in flat areas. NE-SW and NW-SE trending lineaments have controlled drainage net work and movement of ground water of the area. Well inventory carried out during summer season shows different lithounits alluvial soil, fractured / weathered basalt, jointed basalt are good aquifers at different locations with moderate to good yield. Vertical Electric Sounding taken to a depth of 100 to 150 m, indicated that ground water in the entire river basin occur at four different depth level in the ground depending the topographical conditions with an average yield of 3000 to 10000 liters per hour. Efforts are made to correlate resistivity values of litho units with electric conductivity of ground water. Resistivity values supported by electric conductivity of ground water showed that shallow aquifers in the vicinity of sugar industries are polluted due to seepage of effluents to a confirmed depth of 8 to 10m and there is good evidence of pollution of ground water upto a depth of 35 m to 45 m. in the vicinity of sugar factories. Unlined dug wells are more polluted as compared to the lined dug wells. Utilization of such water has reduced the yield of sugar cane.

KEY WORDS: Aquifers, Lineaments, Resistivity, Litho units, Electrical conductivity, Pollution

INTRODUCTION

Ground water is one of the main sources of water for agricultural, domestic and industrial sectors. Ground water has number of advantages over surface water in terms of quantity, quality and availability at given point throughout the year depending upon the aquifer yield. Ground water is present everywhere but at different depths depending upon the topography and rainfall conditions. In the absence of surface irrigation system, ground water is the only source of irrigation throughout the year. Panchanganga river basin covers part of five talukas (segments) of Kolhapur district, i.e Gagan Bavada, Radhanagari, Panhala, Shahuwadi and Radhanagari taluka. According to Gupta (2013), for the part area falling in

Panchanganga river basin spread over part of Gaganbawada, Karveer, Panhala, Radhanagari and Shahuwadi has Net Ground Water Availability of 114.7629 Million Cubic Meter for Future Irrigation Development. The study area has tremendous potential of ground water to meet the requirement for irrigation, domestic and industries. However, ground water should be utilized taking into account the balance between recharge and discharge. In some cases, over-exploitation has caused declining groundwater levels and has consequently limited groundwater flow to deeper weathered / fractured zones (Rai *et al.*, 2011; Kumar *et al.*, 2011, and Maiti *et al.*, 2012). At places, there are evidences of subsidence of land due to over exploitation. Objective of the study was to identify the depth of occurrence of ground water and also correlate the

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MINERALOGICAL CHARACTERISTICS OF SOIL OF PANCHANGANGA RIVER BASIN FROM INFRA-RED ANALYSIS

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ABSTRACT

Infra-red spectroscopy is a well known technique for the characterization of the substances. The principle of the technique is to pass infra-red radiation (4000 to 400 cm^{-1}) through a sample and the absorbed radiation is dispersed through a grating or a set of gratings and is allowed to fall on the detector. Vibrations in the region 550 to 960 cm^{-1} can be attributed to R – OH bending vibrations. Strong vibrations in the region below 550 cm^{-1} arise principally from in – plane vibrations of octahedral ions and their adjacent oxygen layers. The detector signal is amplified and recorded. There will be absorption peaks at frequencies corresponding to the substances. In certain cases, it may be possible to see the influence of rotation of the molecules. From the analytical point of view, the type of chemical bond present, the quantitative estimation of the components of a mixture, the association constant and the binding energy of the complexes can be determined. The Infra-red spectroscopy soils of Panchanganga river basin revealed the presence of kaolinite, halloysite, montmorillonite, attapulgite, nontronite and illite in all the soil samples though in different proportions in association with Quartz and humic acid.

KEY WORDS : Absorption, Clay minerals, Frequencies, Infrared, Panchanganga, Weathering process.

INTRODUCTION

Atoms in the molecules or in the crystal lattice are never at rest and the energy of the characteristic vibration lies in the infra-red region and hence anything happening to the molecular framework finds its effect on the infra-red absorption. The infrared studies are most useful for the identification of the clay constituents and also for the study of fine points of the structure of the clay. The clays from the weathered rocks fall into three main classes in the order of decreasing chemical complexity: the smectite, the illite and the kaolinite clay minerals. Deer *et al.* (1978) classified the clay minerals into five main groups, based on the basal spacing viz. kandite group (7A*), illite group (10A*), smectite group (15A*), vermiculite group (14.5A*)

and palygorskite group. Grim (1968) suggested a classification based on the distinction of shape of the clay minerals and expandable or non-expandable characters of the 2:1 and 1:1 and 1:1 layer silicates into amorphous, allophone group and crystalline group.

Study area: The study area of the Panchanganga river basin selected is bonded between latitude $16^{\circ} 18' 00''\text{N}$ to $16^{\circ} 50' 00''\text{N}$ and longitude $73^{\circ} 50' 00''\text{E}$ to $74^{\circ} 16' 6.42''\text{E}$. The river basin has been carved out in basalt flows of the Deccan Volcanic Province. These rocks now form the valley side, hills and ridges within the basin. At higher altitudes they have been converted into laterites that contain pockets of bauxites. The soils derived from these rocks form a thin veneer on the valley floor. Because of the intensive weathering of parent rock and their

Studies On Malt Instant Dhokla With Tulasi As A Functional Ingredient- A Gujarati Cuisine

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Abstract

Light and fluffy Dhoklas are a Gujarati marvel made with a fermented batter of besan and mild spices. This present study aimed to develop protein rich Dhokla to improve the nutritional status of Gujarati community and to assess its eating and nutritional quality. Methods: The ingredients used are malted soy flour, malted green gram flour, chick pea flour, semolina, tulasi powder, sugar, salt, turmeric and baking soda. Four different formulations were prepared by mixing all dry ingredients at different proportions. Instant Dhokla Mix was rehydrated by adding 250 ml water and steaming for 15 min. The best formulation (T₃) was selected by carrying out preliminary trials using 9-point hedonic rating scale. Result: Nutritional analysis of Dhokla fortified with 6 % tulasi revealed that the Dhokla provides 330.2 Kcal energy, 6.92 gm fat, 24.96 gm protein and 39.58 gm carbohydrate. In conclusion, the malting and adding functional ingredient in traditional food products leads to improvement of nutritional status of community. This Dhokla premix is highly nutritious and convenient product which also serves as good snack item for all age group persons.

Key words – Malting, Soybean, Green gram dhal, Dhokla, Tulasi.

Introduction

Gujarati's are known for their habitual liking for food; undeniably the food is unique and outstanding. The festival of Uttarayan (Makar Sankranti), celebrated in the month of January, marks the end of winter. On this day, kites are flown all over the state from dawn until late in the evening. Each region of Gujarat has its unique cuisine [1]. In Gujarati dishes, the flavors are a blend of sweet, spicy and sour tastes. Gujarati's are famous for its varieties of salty treats such as Khaman Dhokla [2]. It is made with a fermented batter derived from rice and split chickpeas. Dhokla can be eaten for breakfast and are great anytime of the day or as a main course, as a side dish, or as a snack. There are several types of Dhoklas such as Khatta Dhokla, green Peas Dhokla, and Cheese Dhokla etc. Khaman Dhokla has become widely popular outside. It has a great significance in kite festival of Gujarat. Hence present study aims in- i) Formulation and development of Dhokla premix from various functional grains ii) To provide quality proteins iii) To assess its nutritional and sensory quality.

In the present study Dhokla premix includes combination of ingredients such as soybeans, green gram, Bengal gram, semolina and flavorings. Malting is a controlled germination of grain in moist air. Malting aims to modify the physical structure of the grain, allow activation of a series of enzymes, improves bioavailability of minerals and B complex vitamins and inactivate of many anti-nutritional factors Green gram (*Vigna radiata*) have a protein content comparable to that of chick pea and contain less anti nutritional factors [3]. Soybean (*Glycine max*) protein is one of the least expensive sources of dietary proteins. According to the standard for measuring protein quality, soy protein has a high biological value of 74 [4]. Tulsi (*Ocimum gratissimum*) provides beneficial effect on blood glucose levels which is due to its antioxidant properties. The nutritional and pharmacological properties of the whole herb in natural form, result from synergistic interaction of many different active phytochemicals [5]. Bengal gram is a protein-rich based supplement to cereal-based diets, especially to the poor in developing countries which are considered as essential source of nutrients and popular as poor man's meat. The pulse proteins are rich in lysine; and have low sulphur containing amino acids [6].

2. Materials And Methods

The present work was performed in the laboratory of Department of Food Technology, CNCVCW, CSIBER, Kolhapur. All the raw materials were procured from local market of Kolhapur. High density polyethylene bags were used to store raw materials and Dhokla samples. The research study was carried out in following phases.

2.1 Preparation of Malted Flours

Soybeans and green gram dhal were cleaned, soaked (24 hrs & 48 hrs respectively) and germinated with constant wetting for 14-16 hrs. After they were roasted (70°C) and pulverized to fine powder by using grinder. Flours were sieved and then stored in polyethylene air tight bags for further use [7].

2.2 Formulation of Instant Dhokla Mix

The formulation of control [8] and test Dhokla premix are outlined in Table1. All the ingredients were weighed accordingly, mixed, labeled and packaged.

Table 1. Recipe formulation for Instant Dhokla Mix (100 g flour basis)

Ingredients (gm)	Formulations				
	T ₀	T ₁	T ₂	T ₃	T ₄
Malted Soy Flour	-	10	15	20	25
Malted green gram flour	-	05	15	25	35
Bengal Gram flour	80	70	60	50	40
Semolina	20	15	10	05	-
Tulasi Powder	-	2	4	6	8
Common Ingredients	2 g Salt, 0.5 g citric acid, 5 g Sugar and 1 g Baking Soda and 1 g Turmeric				

2.3 Rehydration of Instant Dhokla Mix

Instant Dhokla mix (100 g) was mixed with 150 ml water and leavening agent (5 g ENO-fruit salt regular) and poured into a greased flat tray for steaming in a domestic pressure cooker for 15 min. [8].

2.4 Sensory Evaluation of Dhokla

Sensory evaluation was conducted to assess the degree of acceptability of Dhokla. A piece from each lot of Dhokla was presented to 15 semi trained panelists as randomly coded samples and the taste panelists were asked to rate the sample for color, flavor, texture, taste and overall acceptability on a 1-9 point hedonic scale where 1=dislike extremely; 2=dislike very much; 3 dislike moderately; 4=dislike slightly; 5= neither like nor dislike; 6=like slightly; 7= like moderately; 8= like very much; 9=like extremely [9].

2.5 Proximate Composition

Proximate analysis: moisture, crude protein, crude fat, crude fiber, ash and carbohydrates content were done using AOAC (2005) methodology [10].

3. Result And Discussion

3.1 Sensory Evaluation

The sensory characterization (color, flavor, texture, taste and overall acceptability) of the control and Instant Dhokla are graphically depicted in figure 1. The measured average values of sensory evaluation were used to plot the responses. It is clear from the chart (Figure 1) that the formulated product T₃ was more accepted among all samples. Color, flavor, texture and taste of Dhokla prepared by addition with 6.0 % tulasi powder were improved in the 9-point hedonic scale. Mainly texture of control Dhokla and sample T₃ was very similar as compared to other samples. Results of sensory evaluation are similar to that of reported by [11].

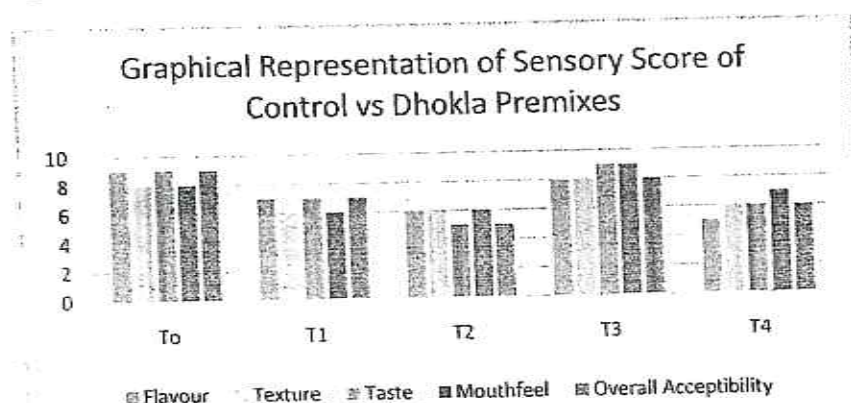
3.2 Chemical Analysis

In the present study, four different Dhokla samples (T₁ – T₄) were prepared with the variation in their formulations. The different formulations were made using different levels of malted soy flour, malted green gram flour, bengal gram, semolina and tulasi powder (2% to 8%). The moisture content of all dhokla premixes was found to be in the range of 6.0 % to 7.0 %. It was studied from table 3 that as increase in percentage of malted soy flour and malted green gram flour leads to increase in amount of proteins, fat, ash and crude fiber. This may be the result of incorporation of malted soy flour and green gram flour [12] which are nutrient dense grains. Thus from the Figure 2, it was reported that, the addition of nutrient dense grain flours increases the nutritional and also sensorial properties of Dhokla. Also addition of tulsi powder may prevent different diseases such as diabetes, asthma, arthritis and heart diseases etc. [11].

Table 3. Chemical Composition of Control and Instant Dhokla Premixes

Parameters (%)	Dhokla Samples				
	T ₀	T ₁	T ₂	T ₃	T ₄
Moisture	6.60	6.02	6.15	6.07	6.78
Protein	19.51	21.7	23.28	24.96	26.51
Fat	4.38	5.93	6.46	6.92	7.46
Ash	1.84	2.22	2.53	3.90	3.14
Fiber	14.06	15.85	15.84	18.57	20.60
Carbohydrates	53.61	48.28	45.68	39.58	35.51
Energy (Kcal)	329.9	333.1	332.02	330.2	329.76

Figure 2. Graphical Representation of Control vs. Instant Dhokla Premixes



4. Conclusion

Dhokla, a Gujarati traditional product was prepared by incorporating malted soy flour, malted green gram flour, Bengal gram dhal, semolina and tulasi powder as functional ingredient. It can be concluded from the results of the present study that the value addition of soya flour, green gram flour and tulasi powder helped to enhance protein, fat, total minerals and fibers. Incorporation of tulasi powder in varying percentages had a significant impact on physical and sensory properties of Dhokla. About 6.0% tulasi powder incorporated Dhokla showed significant increase in all parameters as compared to standard. Sensory evaluation revealed that sample T3 containing 20% of malted soybean flour, 25% of malted green gram flour and 6.0% of tulasi powder had highest acceptability and found to be ideal in terms of physical, nutritive and sensory parameters. If we include tulasi powder Dhokla in daily life style, it prevents many diseases. Considering the low moisture percentage, Dhokla premix could be stored safely for 6 months. The regular use of value added instant Dhokla mix may help to upgrade the nutrient security of the population.

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Festivals In Uttarayan And Their Impact On Health

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Introduction:

Festivals play a very important role in our life. Festivals are mainly related to religion, environment and many deities are worshipped during the festivals. Hindu festivals depict the culture of India thoroughly since ancient times and up till modern era. Festivals promote harmony among the people. Festivals help to preserve our heritage and culture. Festivals promote a positive effect on health of people. Food made during the Festivals is highly nutritious and as it is eaten during social gatherings, it provides a psychological impact i.e. peace of mind. However, there are some bad effects of festivals on environment and human health. Noise pollution, may cause hearing losses, sleeplessness, high stress levels etc. Air pollution may cause respiratory problems like asthma, heart blocks etc. Water pollution may lead to many gastrointestinal diseases. High wastage during festivals may have negative impact on rag pickers and people living near dump yards. If only the positive impacts are taken into consideration and all negative impacts are overcome, then festivals in true sense will bring harmony.

India is a land of Unity in diversity that occupies the greater part of South Asia. India is a home to innumerable castes, tribes, religions as well as a more than a hundreds of minor linguistic groups. In India Festivals are categorised according to the path of Sun around the Earth i.e. Uttarayan and Dakshinayan. In Uttarayan Sun travels from Capricorn (Makar rashi) to Cancer (KarkaRashi) that is from South to North. It is six months long period. During Uttarayan days are longer and nights are shorter. Uttarayana is considered to be a symbol of positivity. Some festivals welcome the seasons of the year, the harvest, the rains, or the full moon. Others celebrate religious occasions, the birthdays of saints or the advent of the New Year. A number of these festivals are common to most parts of India. However, they may be called by different names in various parts of the country or may be celebrated in a different fashion.

Festivals in Uttarayan:

On January 14, Uttarayan period i.e. Makar Sankranti starts and ends at KarkaSankranti i.e. 16 July. The festivals are designed as per six Indian seasons that are Vasant, Grishma, Varsha, Sharad, Hemant and Shishir. The festivals include Lohri, Republic day, Vasant Panchami, Pongal, Makar Sankranti, Holi, Kite festival and Gudi Padwa. During these festivals traditionally different types of recipes are prepared and consumed by the people since ancient times and according to Ayurveda, these recipes provide many health impacts on human body. These will be discussed according to the festival.

Lohri:

Lohri is the festival of North India i.e. Haryana and Punjab, celebrated by Hindus and Sikhs. It is celebrated a day before Sankranti in the paush month of Hindu calendar. It is celebrated to show gratitude towards God for abundance of harvest. People light bonfire and enjoy Lohrinight by singing songs and dancing. The songs are sung to thank God for good harvest and also to commemorate the warrior Dulla Bhatti of Punjab. There are social gatherings and people enjoy dinner with sarsonkasaag and makki di roti. Sweets called gajak (chikki made from sesame seeds, groundnuts and jaggery) are distributed among each other. Gajak is rich in carbohydrates, fats, proteins, calcium, iron. Makkiki roti is made from coarse maize flour. It is rich in carbohydrates, vitamin C, fibre and anti-oxidants. Sarsonkasaag is rich in dietary fibres, Vitamin C, Calcium and Iron.

Sesame seeds, groundnuts and jaggery present in Gajak increases the rate of metabolism and keeps the body warm during winter.

Rewadi gives instant energy, reduces cholesterol, improves blood pressure, balances hormones, fights against cancer, burns body fat and boosts absorption of nutrients.

Maize reduces risk of anaemia, increases weight, lowers blood sugar and cholesterol, preserves healthy skin.

Republic Day:

On 26th January 1950 constitution of India has come into actual effect with parliamentary implementation and India became a republic nation. Republic day is celebrated in schools, colleges and all Government offices. It is celebrated for the inception of constitution of India. Sweets like Jalebi is distributed among children. Parade is organised in school and in front of government officers, ministers and President of India.

Jalebi is rich in carbohydrates and fats. Jalebi is useful in migraine, headache, hyperacidity, gastritis, sexual debility, oligospermia and reduced sexual libido.

Vasant Panchami:

It is celebrated on fifth day of Magh. It is celebrated in different parts of India. It is the birthday of goddess Saraswati who is considered to be the goddess of language, art, dance and music. Vasant Panchami is also the day which indicates the onset of spring season. People wear yellow coloured clothes. And also the fields are blossomed with yellow flowers of mustard. Yellow colour thus signifies the beauty of nature.

Kesar Halwa is prepared which is made of moong dal flour, milk, sugar, nuts, kesar and cardamom powder. It is rich in carbohydrates, protein, fibre, vitamin B1 and calcium. Moong dal Halwa maintains healthy state of body, good for eyes, reduces fever, energiser and nourishing, useful in weight gain, coolant, absorbent and can be recommended in post fever debility.

Pongal:

It is also called Thai Pongal. Thai means season in January and February in Tamil. This is celebrated in South India mostly in Tamil Nadu. This festival is four days long when crops like turmeric, sugarcane and rice are harvested. Pongal means to boil.

Pongal rice dish is food of this festival which is prepared with rice and moong dal to make sweet or savoury dish and seasoned with ghee. Pongal is rich in carbohydrates, protein, vitamin B1, magnesium, folic acid, antioxidants and dietary fibre. It is good for cough and cold, ginger in it fights with infection and boosts digestion, controls nausea.

Makar Sankranti:

It is primarily a harvest festival that is dedicated to Sun God. Makar Sankranti marks the beginning of Uttarayan. It is celebrated on 14th or 15th January. On Makar Sankranti the sun rays are very healthy for the body and skin. Makar Sankranti is celebrated in different parts of India by different names. In Andhra Pradesh, Makar Sankranti is known as Pedda Panduga and it is celebrated for welcoming harvesting season in India. In Karnataka the Makar Sankranti is the Suggi or harvest festival. This ritual is called "Ellu Birodhu." Ellu means sesame seeds and 'bella' means jaggery. In Punjab, Haryana and Himachal Pradesh the festival is as known as Maghi. They perform Bhangra to welcome the New Year on Maghi. The special dish of the day is kheer cooked in sugarcane juice. In Assam, it is celebrated as Magh Bihu. This festival marks the end of the harvesting season when there is abundance of everything.

In Maharashtra, people celebrate Makar Sankranti by sharing multi-coloured tilguds (a sweet dish made from sesame seeds and jaggery) and tilladdus. Gul poli is the special dish on this day that is made from wheat flour chapati stuffed with a mixture of roasted ground sesame seeds and groundnuts with jaggery. People greet each other by saying 'til-gulghya, god god bola', which means 'accept the sweets and speak sweet words'. On Bhogii.e. on 13th January people (previous day of Sankranti) make Brinjalsabji with carrots, beans, peas, potatoes and onions along with bajribhakri with white butter on it. Moong Khichadi is made on this day instead of plain rice. Tilgulladdu, tilgulpoli are rich in carbohydrates, fats, proteins, calcium and iron. Bajra is high in protein, insoluble fibre and is gluten free. Moong Khichadi is rich in carbohydrates, protein, vitamin B1, magnesium and folic acid. Bajra aids in digestion, lowers the risk of gall stones and helps to prevent cancer. Brinjal controls blood sugar, reduces risk of heart diseases, helps in weight loss and acts as anti-cancer agent. Carrots are good sources of carotenes, fibres, vitamin K, potassium and anti-oxidants. It lowers the cholesterol level, helps in weight loss, improves eye health and acts as anti-cancer agent.

Holi:

It is celebrated on full moon day in the month of Phalgun. Holi is the festival of colour and love. The celebration includes bonfire on previous night where people gather and sing and dance. Lighting of bonfire means triumph of good over bad. On second day people colour each other with different colours to show love and respect towards closer ones.

People make puranpoli as a special dish and is served with ghee. Bhang an intoxicating drink from cannabis leaves and flowers, milk and spices and consumed. Puranpoli is rich in calories, proteins, carbohydrates, folic acid, iron and fibre. Ghee is rich in calories, fat soluble vitamins and medium chain fatty acids. Puranpoli increases red blood cells and helps in weight loss.

The holikadahan includes burning of big trees which is not environment friendly and produces harmful smoke that causes air pollution and bonfire may prove threat to participants.

Indian International Kite festival:

In the state of Gujarat International kite Festival is celebrated in grand form. Many months before this festival, in homes of Gujarat manufacturing of kites starts. It is celebrated in mid-January. It signifies uttarayan that means winter begins to turn into summer according to Indian calendar. In 2012 this festival entered in the Guinness Book of World of records as a participant. This festival aims at awakening of god from deep sleep. Traditionally it is celebrated by kings and nawabs as entertaining sports, then later on it reached to masses in the form of festival.

Flying with sports spirit and enthusiasm impacts very positively on mental health, removes depression and changes one's attitude towards life being socially active. It creates playfulness in life, decreases anxiety and depression. It improves brain and heart function. It improves distant eyesight.

The dishes made during this festival include, Undiyo which is a mixed vegetable including brinjal, potato, raw banana, yam, peas and beans, Sesame seeds Chikki and Jalebi. These are distributed in community. Undiyo aids in digestion and relieves constipation.

But it may prove dangerous for birds as the threads can cause injury to them and the thread may also cause injury to kite flyer. Kite flying may lead to accidents such as falling from heights.

Gudi Padwa:

It is the starting of spring festival and also the starting of Marathi new year Chaitra i.e. in the month of March. It is mainly celebrated in Maharashtra and Goa. It is called as Ugadi in south India. It is celebrated as victory of Lord Rama over Ravana and welcoming ceremony of Rama-Sita back to Ayodhya after a great battle of Ramayana and coronation of Shri Rama after 14 years of exile. Reaping of rabi crops is also celebrated through it in the month of Chaitra. Special flag generally yellow or red colour is made with garlanded flowers, mango neem leaves and upturned silver or copper vessel signifies victory and achievement. It is believed to remove all evil, invite prosperity and good luck into the house.

The dietary special dish in the festival includes shrikhand-puri, pooran-poli, sweet-rice etc. Shrikhand is rich in riboflavin, folic acid, vitamin B₁₂, calcium and phosphorus which is also good for people with lactose intolerance. Shrikhand is also good for skin, aids in digestion, improves intestinal health in colitis, prevents intestinal cancer, helps in diarrhoea, dysentery and helps in weight gain. Sweet rice helps in digestion and prevents constipation, cleanses liver by flushing out toxins from the body, produces cooling and soothing effect on body so useful in early summer.

Conclusion :

Celebrating pattern and particular diet in each and every festival of India provides many positive as well as negative impacts on human health and environment.

Festivals provide harmony in community. They carry message of past generation to present and future generation. They predominantly help to preserve heritage and culture. Festivals help in socialisation of people. Enthusiastic environment in festival helps to overcome mental disorders like depression and anxiety and reduce the mental distress. Various dietary patterns give positive impact on physical health also.

But along with the positive impact there are some negative effects of festivals that affect environment and human health also due to noise pollution, air pollution and water pollution.

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The mineral base quality used in the concentration of and organic carbon (DOC), sulphur (S), and phosphorus (P), high base density (DB), rock fragments, and moisture content, and water holding capacity and low biomass productivity (0.2-0.5%). This lowers the overall fertility of the soil and increases water movement through the soil and landscape (10). Mining activities expose environmental problems throughout the extraction and subsequent processing of the resources and at times persist even after the entire operations are over (11). Mining brought new potential hazards and risks to the environment and creates wasteland and waste to the environment and creates wasteland as a byproduct (12-15). Doshi has stated that mining has environmental impacts such as deforestation, loss of biodiversity, water, soil and air pollution, land use conflicts, socioeconomic impacts and depletion of non-renewable resources, subsidence, aesthetic degradation and noise (16-18). According to mining and quarrying state environmental report (2003), Ballari is one of the districts in the state of Karnataka where abandoned mines are present where environmental degradation is very high, around 8,898.63ha (15.12%) followed by Chikmagalur district (3,029.31ha, with 4.52%).



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Regarding :
Indian Journal of Environmental Protection
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Subject : Acceptance of paper No. U 10

It is to inform that paper number U 10 entitled " HYDROCHEMICAL FACIES OF GROUND WATER OF PANCHAGANHA RIVER BASIN, KOLHAPUR, MAHARASHTRA " authored by Dr. A.R.Kulkarni (College of Non-Conventional Vocational Courses For Women (CNCVCW), affiliated to Shivaji University Kolhapur) has been accepted for publication in the Indian Journal of Environmental Protection, ISSN - 0253-7141, after peer-review process and will be published soon in our journal.

The journal is indexed / abstracted in SCOPUS, ULRICH, CAS and ICI etc. The Indian Journal of Environmental Protection is included in the Group A of UGC-CARE List of Recommended Journals.

Thanking you,

Yours faithfully,

M. Kumar

(Mrs Mohini Kumar)
Proprietor



[Handwritten signature]

Hydrochemical Facies Of Groundwater Of Panchaganga River Basin, Kolhapur

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Groundwaters undergo changes in their chemistry and quality as they pass through rocks, soils and human settlement areas. The modification is manifested in variations in their cation and anion constituents. Attempt has been made to classify groundwater on the basis of their chemistry, the sources of the major ions and to categorize quality of groundwater for irrigation purposes. The physical parameters, such as pH (7.5 average 8.5), EC (400-3268 $\mu\text{mhos/cm}$) and TDS (1166-2451.25 mg/L) found to be higher in groundwater samples near the sugar factories. Average values of cations and anions were in the order of Ca (107.04 mg/L), Na (67.46 mg/L), Mg (61.31 mg/L), K (11.44 mg/L) and Cl (245.38 mg/L), HCO_3^- (192.50 mg/L), SO_4^{2-} (59.51 mg/L), respectively. Average sodium adsorption ratio (SAR) was 1.35. Calcium - magnesium, cation hydrochemical facies is most dominant with 92% followed by 8% of sodium - calcium facies. Anion hydrochemical facies is dominated by chloride - sulphate - bicarbonate facies (65.39%), bicarbonate - chloride - sulphate facies (19.23%) and chloride - sulphate facies (15.38%). The dominance of calcium - sodium facies can be attributed to the leaching or ion-exchange reactions. Because of medium to high salinity hazard ground water is by and large suitable to moderate to high salt tolerant crops demanding for reclamation of soil for better agriculture yield.

KEYWORDS

Groundwater, Physico-chemical parameters, Hydrochemical facies, Hydrolysis, Salinity hazard

1. INTRODUCTION

The concept of groundwater composition also known as hydrochemical facies is useful for the identification of the hydrochemical facies, water type, hydrochemical processes, chemical character of the water, their similarities and differences in any given aquifer system [1, 2]. The concept of hydrochemical facies was introduced by Back to indicate the diagnostic chemical characteristics of groundwater [3]. Earlier, Piper had used a triangular diagram for the graphical representation of water analysis [4]. The hydrochemical facies are the distinct zones that have cation and anion concentrations describable within defined composition categories. Handa recognized the different hydrochemical zones in India with respect to their geological and geographical distribution [5]. Handa correlated the dissolved mineral matter with changes in the ionic character of water in basaltic terrain [6]. Pawar studied the hydrochemical facies of shallow groundwater bodies in Basaltic terrain around Pune and reported the seasonal variation in the cation and anion hydrochemical facies [7]. The mechanisms that control the chemical

composition of the major dissolved salts of the groundwaters have been discussed by Gibbs and Ramesam [8,9]. Viswanathiah and Sastri established the relationships of composition of water to aquifer lithology [10,11]. The degree to which rock/mineral weathering influences groundwater chemistry is a function of several factors, such as residence time of groundwater in the host rock, the ambient temperature and pH, among others [12,13,14,15].

In order to evaluate the geochemical changes in groundwater, hydrochemical facies are broadly classified into cation hydrochemical facies and anion hydrochemical facies. The cation hydrochemical facies give the proportions of the cations, that is sodium, potassium, calcium and magnesium, in the groundwater. The cation hydrochemical facies are subdivided into four types, namely calcium - magnesium [Ca + Mg] facies, calcium - sodium [Ca + Mg, Na + K] facies, sodium - calcium [Na + K, Ca + Mg] facies and sodium - potassium [Na + K] facies. The anion hydrochemical facies reflect the proportion of anions in the groundwater. This facies is further subdivided into four groups. Bicarbonate [$\text{CO}_3 + \text{HCO}_3$] facies, bicarbonate - chloride - sulphate [$\text{HCO}_3, \text{Cl} + \text{SO}_4$] facies, chloride - sulphate - bicarbonate [$\text{Cl} + \text{SO}_4, \text{HCO}_3$] facies, chloride - sulphate [$\text{Cl} + \text{SO}_4$] facies.

Studies on Tropics of Fish Along Upper Tungabhadra Channel, Ballari District, Karnataka

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Abstract

Gut analysis is the tool to understand the feeding patterns of fishes and is an important aspect of fisheries management. It also provides the basis for understanding trophic interactions in aquatic food webs and to investigate the most frequently consumed prey or to determine the relative importance of different food types to fish nutrition. In the present study the gut content analysis was performed in Garra, Gobi, Notopterus and Tilapia fishes collected from Tungabhadra upper irrigation channel at Ballari, Karnataka. Bacillariophyceae showed maximum number in all the four fish species. Over all it showed 40% followed by Detritus (30%), Chlorophyceae (17%), Cyanophyceae (7%) and Zooplankton (6%). Among fishes Garra showed maximum food items (2272) followed by *Glossogobius giuris* (1538), *Notopterus notopterus* (996) and *Oreochromis mossambicus* (769). The relative abundance of food items in the guts also revealed the *Garra gotyla stenorrhynchus* *Oreochromis mossambicus*. The variation is due to availability of food organisms during the study period and anthropogenic influence on channel water.

Keywords

Diatom; Garra; Gut Analysis; Notopterus; Plankton; Tilapia

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MINING AND ENVIRONMENT

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"Sustainable development" is that pattern of development which "meets the needs of the present without compromising the ability of the future generations to meet their own needs" (World Commission on Environment and Development, 1987)

1.0 INTRODUCTION

Minerals are valuable natural resources that are finite and non-renewable. The history of mineral extraction in India dates back to the days of the Harappan civilization. The wide availability of minerals in the form of abundant rich reserves and the geo-geological conditions make it very conducive for the growth and development of the mining sector in India. As a major resource for development the extraction and management of minerals has to be integrated into the overall strategy of the country's economic development. The exploitation of minerals has to be guided by long-term national goals and perspectives. Thus, minerals play a key role in the evolution of human society and its overall economic development. Metals/stones, electrical & electronics equipment, glass and ceramics etc. There will be huge demand for minerals in view of the rapid urbanization and projected growth in the manufacturing sector in India. India occupies a dominant position in the production of many minerals across the globe.

Mining sector, being one of the core sector of economy, provides basic raw materials to many important industries like power generation (thermal), iron and steel, cement, petroleum and natural gas, petro-chemicals, fertilizers, precious & semi-precious.

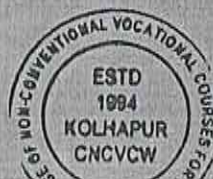
On one hand mining is essential for the socio-economic development of our country and at the same time there are number of health and environmental impacts at various stages of mining. There are different phases of a mining project, beginning with mineral ore

exploration and ending with the post-closure period. What follows are the typical phases of a proposed mining project. Each phase of mining is associated with different sets of environmental impacts. It is need of the time to understand and address the environmental issues at the beginning of the projects so that adverse impacts can be minimized. The development of mining industry should be sustainable in nature. This can be done by the implantation of Sustainable Development Framework (SDF) Developed by the Ministry of Mines, Government of India. The sustainability of the mining industry stands on three pillars: economic, environmental and social. Striving for sustainable development involves balancing the inevitable conflicts in these three areas.

2.0 MINING AND ECONOMIC DEVELOPMENT

India is home to 1,531 operating mines and produces 95 minerals – 4 fuel-related minerals, 10 metallic minerals, 23 non-metallic minerals, 3 atomic minerals and 55 minor minerals (including building and other materials and the recently notified 31 additional minerals). Area occupied by mining in India just less than 2%. Area occupied major and minor minerals are approximately 60% and 40 % respectively.

India is the 3rd largest producer of coal. Coal production grew at CAGR 5.17% over FY14-FY19 (to 739.36 MT) and is expected grow 6-7% Y-o-Y over FY20 as miners focus on surface mining of coal. Coal's share in India's primary energy consumption is expected to be 48% in 2040. India is the 2nd largest crude steel producer in the world, generating an output of 106.5 MT in 2018, a growth of 3.7% Y-o-Y (<https://www.investindia.gov.in> > sector > metals-mining).



Dr. A.R. Kulkarni



'DINACHARYA' (Daily Regimen): AN AYURVEDIC APPROACH FOR PREVENTION OF COVID-19

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Abstract

Ayurveda is the Science of Life. An ancient Indian system of medicine deals with almost all aspects of human life related to physical, mental and social health and overall development of a man. The basic principle of Ayurveda is prevention. Modern science also focuses on prevention when it comes to any viral infection. And thus vaccines (half killed virus) are injected to stimulate acquired immunity. Ayurveda also deals with the maintenance and enhancement of immune power. All of which have become an integral part of our lives nowadays in this pandemic situation. *Dinacharya* is the one part of Ayurveda which talks about daily regimen. It includes rules and regulations to be followed by an individual to maintain a happy, healthy, active and disease free life. COVID-19 is certainly a preventable disease which can be kept away by following the Ayurvedic principles mentioned in *Dinacharya*. If one follows the *Dinacharya* as per Ayurvedic treatises, he will be able to keep himself away from infections and if at all exposed to the infection, can overcome again with a good immune power.

Key words: Ayurveda, viral infection, vaccine, pandemic, *dinacharya*, COVID-19, immune power.

Introduction

Health is a state of complete physical, mental and social well-being and not merely absence of any disease or infirmity. According to Ayurveda- an individual is said to be healthy whose humours (*doshas*), tissues (*dhatu*s), excretory products (*mala*) and digestive capacity (*agni*) are in the state of equilibrium along with mental sensory and spiritual pleasantness and happiness. Ayurveda is an ancient Indian Medicine. It is the oldest system of Indian Medicine. Ayurveda means the Science of Life. It teaches us the basic principles of life which are eternal. Ayurveda basically focuses on preventive approach. It deals with the root causes of any disease rather than focusing symptomatic approach as in allopathic medicine or modern medicine. Ayurveda has given a very comprehensive approach for the prevention



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12th July' 2018

Ms. S. M. Dhavan
Assistant Professor
College of Non Conventional Vocational Courses for Women
CSIBER
KOLHAPUR- 416004
Maharashtra

Subject: Acceptance Letter

Madam:

This is with reference to your research article, "Socioeconomic Status and Obstetric History of Post-Menopausal Women in Kolhapur City of Maharashtra" by S M Dhavan and R M Kamble, sent by you on 7th July' 2018 for consideration of publication.


We are pleased to inform you that your article is according to NAAS guidelines and has been accepted for publication and will be published in volume 59 no. 60 no. 1 (Jan-Feb) 2019 of INDIAN JOURNAL OF SOCIAL RESEARCH (bi-monthly) (UGC Approved and NAAS Rated).

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S.K Puri
Managing Editor



SOCIOECONOMIC STATUS AND OBSTETRIC HISTORY OF POST-MENOPAUSAL WOMEN IN KOLHAPUR CITY OF MAHARASHTRA

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Amaravati

Abstract

To assess socioeconomic status of post-menopausal women in Kolhapur city of Maharashtra. 300 post-menopausal women between the age group of 50-59 yrs. were selected from Kolhapur city of Maharashtra.

The mean age of the participants was noted as 54.51 ± 4.90 . The majority of the post-menopausal women in all the categories were Hindu (86.0%), married (71.0%) and housewives (63.0%) who studied up to SSC (30.0%). Most of the study population (40.0%) had annual income up to Rs. 2.5 lakh and belonged to small (75.0%) and nuclear (68.0%) families. Most of study population had their menarche before the age of 14 years (50.0%) and had regular (87.0%) and painless (66.0%) menstrual cycles. Majority of selected post-menopausal women got married between the ages of 18-25 years (71.0%) and had spontaneous (natural) menopause (69.0%). The mean age (yrs.) of menopause of was 44.24 ± 5.71 .

Introduction

India has a large population, which has already crossed the 1 billion mark with 71 million people over 60 years of age and the number of menopausal women about 43 million. Average age of menopause is 47.5 years in Indian women with an average life expectancy of 71 years (Unni J., 2010). Menopause literally means the "end of monthly cycles". It derived from the Greek word pausis (cessation) and the root men- (month). Menopause is an event that typically (but not always) occurs in women in midlife, during their late 40s or early 50s, and it signals the end of the fertile phase of a woman's life. The World Health Organization defines natural menopause as the permanent

“MONITORING OF BUILT OPERATE TRANSFER (B.O.T.) CONTRACTING”

AR. RUPALLI MIRJE

Abstract: Infrastructure development is the key driver for the economy of any country. But as the infrastructure development has limitations due to scarcity of funds and scarce budgetary resources Indian government has allowed participation of private firms in public beneficial programmes with the help of non-conventional contracting. In BOT, the private sector designs, finances, constructs and operates the facility and transfers the ownership of the facility to the government after a specified concession period. Hence BOT can be seen as a technique for infrastructure development and service provision by merging the private and public resources. However the success of BOT can be judged only after the completion of concession period. Anticipation, timely measures and avoidance of problem leading to time and cost overruns becomes critical to the success of the project. Hence monitoring system is mandatory to keep a check on all the various construction activities as well as financial outlay of a project.

Keywords: Infrastructure development, BOT contracts, Monitoring of construction, Private Sector Participation

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STUDY OF AWARENESS ABOUT IRRIGATION SYSTEM AMONG THE FARMERS

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Abstract: The present study was carried out in Department of Environment Management, Chhatrapati Shahu Institute of Business Education and Research, Kolhapur with the focus on understanding the irrigation system practiced by farmers in Kolhapur and Solapur district, present study also tried to cover the views of farmers regarding the importance of water and irrigation in agricultural activities. Total two hundred respondents were selected randomly from Kolhapur and Solapur district. Present study indicates that, many farmers are lacking the awareness about proper irrigation in agriculture while few active farmers also think and adopted water conserving which play very important role in proper irrigation.

Index Terms: Irrigation, Farmers, Agricultural Activities, Water

I. INTRODUCTION

Irrigation is essentially the artificial application of water to overcome deficiencies in rainfall for growing crops (Carter, 1967). Irrigation is a basic determinant of agriculture because its inadequacies are the most powerful constraints on the increase of agricultural production. In traditional agriculture, irrigation was recognized for its protective role of insurance against the vagaries of rainfall & drought. But now, adoption of high yielding varieties, chemical fertilization & multiple cropping highly used controlled irrigation for increasing productivity.

Irrigation systems are often designed to maximize efficiency & minimize labour & capital requirements. There are three broad classes of irrigation systems: 1. Pressurized distribution 2. Gravity flow distribution 3. Drainage flow distribution. Water is nature's free gift to the human race. (W. K. Henry (2016). Desveria S. (2013) concluded that, the novel approach to design irrigation system is the use of plant water stress index. While Hirendra (2009) mentioned the acoustic method has been used to measure water content of soil on the fact that travel time of sound wave is different in dry & wet soil. C. Choudhary (2011) observed that, the traditional method that is used for irrigation, such as overhead sprinkler and flood type is not that much efficient. As well as in irrigation system soil parameters such as pH, humidity, moisture and temperature are measured for getting high yield (Sonali S. Gaurawat and Dinesh V. 2015).

To make irrigation system simpler, the complexities involved in irrigation are tackled with automation system said by R. Subhaskrishnan in 2016.

II. RESEARCH METHODOLOGY

2.1. Location of Sampling and Sampling Method:

Study Area

Study area for this project is Solapur and Kolhapur. The study was carried out in these two districts.

2.2. Location of Sampling:

1) Solapur

2) Kolhapur

2.3. Methods of Sampling:

Survey Method is used for collection of data from selected farmers.

1) Primary data: - This project, primary data were selected from two hundred respondents. With the help of questionnaires primary data will be collected from the farmers.

2) Secondary Data: - Secondary data were collected from previous reports on irrigation projects, websites etc.

III. RESULTS AND DISCUSSION

This section shows the graphical representation of collected data. In presented all graphs, the values represented on Y axis are in percentage.

3.1. Major Crops:

Different crops are produced in selected areas. In Solapur region farmers have taken following major crops i.e. Sugarcane (16%), Jowar (16%), Groundnut (4%), Pomegranate (34%), Red gram (2%), Safflower (2%), Wheat (4%), Ridge gourd (2%) where as in Kolhapur they prefer Sugarcane (94%), Jowar (4%), Groundnut (2%) as major crops.



STUDY ON AWARENESS AND PRACTICES ABOUT ORGANIC FARMING AMONG THE FARMERS

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(Professor and Head)

K. D. Ahire

(Assistant Professor)

Department of Environment Management

Chhatrapati Shahu Institute of Business Education and Research, Kolhapur, India

Abstract

The present work carried out at Department of Environment Management, Chhatrapati Shahu Institute of Business Education and Research with examine the application of organic farming among the farmers. It also focused on the attitude of the farmers towards the organic farming. The data were collected from the 150 respondents from Sangli district, Maharashtra. This study was carried out by self structured questionnaire. The findings indicate that there is less awareness about the organic farming between the farmers. Whereas the moreover farmers are found to be used to with the usage of chemical fertilizers & pesticides for the agricultural practices.

Keywords: Organic farming, Fertilizers, Agricultural practices, Pesticides, Insecticides

1. Introduction

Organic materials such as farm yard manure, biogas, slurry, compost, straw or other crop residues, biofertilizers, green manures and cover crop can substitute for inorganic fertilizers to maintain the environmental quality. In addition, the organic farmers can also use seaweeds and fish manure and some permitted fertilizers like basic slag and rock phosphate. The conservation of natural enemies of pests is important for minimizing the use of chemical pesticides and for avoiding multiplication of insecticides - resistant pests. Botanical pesticides such as those derived from neem could be used. Selective microbial pesticides offer particular promise, of which strains of *Bacillus thuringiensis* is an example.

D. Ripby & D. Caceres (2018) reported that sustainability is considered in relation to organic farming a sector growing rapidly in many countries.

In the view of Ian Fan, Christian Bugge, Hendrickson & Johan Porter (Feb 2018), Agro-ecosystem cover almost 40% of the terrestrial surface on Earth, & have been considered as one of the most significant ecological experiments with a potential

STUDIES ON MACRO-INVERTEBRATE POPULATION AND THEIR RELATIONSHIPS WITH ENVIRONMENTAL FACTORS IN DAROJI LAKE, BALLARI, KARNATAKA

19

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2018

Abstract

An investigation was made on the study of macro invertebrate communities in Daroji Lake from July 2018-to December 2018. In the present study, it was found that the order Odonata comprises five species viz., Lestes, Aeshna, Epitheca, Sympetrum and Cordulegaster followed by Hemiptera (5 species) Buena, Notonecta, Lethocerus and Gerris. Ephemeroptera and Plecoptera comprise *Epeorus* sp, *Leptophlebia* sp. and Pteronorsis, Capnia respectively. Whereas, Megaloptera and Trichoptera showed single species *Dysmicohermes disjunctus* and *Chimarra* each. The percentage composition indicated that Odonata showed maximum 33 % followed by Epimeroptera (25 %), Hemiptera (19 %), Megaloptera (10 %), Plecoptera (10 %) and Tricoptera (3 %). The predicted Shannon-Wiener diversity index was found to be (SW=1.59) and Family Biotic Index (FBI) ranged between 1 and 2 (with fair 11 points), indicated the fair representation of benthic organisms. The analysis of physicochemical parameters indicated fluctuation from July to December. These changes were attributed to the drastic water level fluctuation of the Daroji Lake. However, physicochemical and biological data showed they were within the standards.

Keywords: Benthic fauna, Daroji Lake, Family Biotic Index, Shannon-Wiener diversity index

1. Introduction

The benthic zone is the bottom region of water bodies such as a lake, pond, or stream. In freshwater systems, organisms that are larger than 250-500 microns are called macro invertebrates. Generally the presence of a diverse assemblage of long-lived taxa such as the larvae of Ephemeroptera (mayflies), Plecoptera (stoncflies) and Trichoptera (caddis flies) indicates a relatively healthy water body that is not subject to high degrees of pollution (Ferro, and Sites, 2007). These insect groups (the "EPT") are thus considered indicators of relatively healthy water bodies (Ghani *et al.*, 2016). On the other hand, proliferation of oligochaetes and some members of the family Chironomidae may be indicative of organic pollution or stagnant water (Philips, 1980).

"Optimization of Risk allocation in Built Operate Transfer Projects"

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Abstract:- Civil infrastructure is vital to the Nation's economic growth. Infrastructure may be considered to be the skeleton on which the society is built. Traditionally infrastructure projects are characterized by large financial outlay requirements and long gestation period. The investment involved high upfront costs and long term financing since the pay back period is long. Budgetary resources from the Governments have been the major source of financing for infrastructure such as the road projects in India. But since the last two and half decades, many infrastructure projects have been completed through built-operate-transfer (BOT) type of procurement. This was mainly due to scarce budgetary allocation infra projects due the shortage of funds. The developments of BOT have attracted participation of local, foreign and private sector investments to secure funding and to deliver projects on time, within budget and to the required specifications. Due to this the parties to the BOT or the investors are exposed to multiple and dynamic risks. Hence effective risk allocation the various risks is essential in ensuring the success of BOT projects. This paper discusses the risk faced by BOT projects and their mitigation measures.

Keywords–BOT project, risk allocation, BOT (Toll) and annuity

Introduction –

The steady economic growth due to economic liberalization in the 1990 has resulted in high traffic growth with the highways becoming increasingly congested resulting in need for improved road transport. The upgrading of the Indian road network to world-class standard has occupied immense importance in the post-liberalization era; as delay on the roads could result in high inventory costs, thus affecting India's competitiveness in the International Market.

In the post-liberalization ear, the Central Government and the State Government changed their policy in the mode of procurement of infrastructure such as road projects in India. The Central Government and the State Government have adopted the Public Private Partnership (PPP) resulting in private sector participation for the development of roads. Participation of private sector in the development of National Highways network is through the PPP model namely Built-Operate-Transfer type (Toll) and BOT (annuity).

The BOT is a type of infrastructure project which is based on granting of concession by principal, usually a government, to a promoter, sometimes known as Concessionaire, who is responsible for construction, financing, operation and maintenance of a facility over the period of the concession before finally transferring the facility, at no cost to the Government in a fully operational condition. The facility is operated by the Concessionaire during the concession period to generate revenue to settle the debts payment and profit for the investment. The Concession Agreement stands binding to the various parties to the BOT.

STUDY OF OCCUPATIONAL HEALTH ISSUES: FACED BY BUS DRIVERS

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Abstract : Health has always been closely linked with occupation. The working conditions of bus drivers have remained virtually unchanged for over a century in Kolhapur. They exposed to certain health problems by virtue of their occupation. The present study is undertaken about occupational health related problems of bus drivers. The objectives of this cross sectional study to assess the effect of work environment on driving condition using structured interview, structured questionnaires. The most common health symptoms experienced by the bus drivers were fatigue, back pain, and cough and colds. This study underlines the need for an occupational health and safety program for bus drivers in the Kolhapur city.

Index Terms - Occupational health and safety, Bus drivers, Diseases, Ergonomics

I. INTRODUCTION

Occupational health is a multidisciplinary field concerned with the safety, health, and welfare of people at work. The goals of occupational safety and health programs include fostering a safe and healthy work environment. As defined by the World Health Organization (WHO) "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards." Health has been defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Occupational health is a multidisciplinary field of healthcare concerned with enabling an individual to undertake their occupation in the way that causes least harm to their health.

As per the Mc Kernon, S. A., on driver point of view bus drivers have more frequent absences from work and of longer duration than workers in other occupations. A large proportion of the work absences are attributable to stress-related disorders such as digestive problems and anxiety. Bus driving interferes with social support in two ways. The job itself is solitary with little chance for face-to-face contact between co-workers. The work schedule disrupts family and social life. They also suggested that how buses are designed and how work is scheduled may account for musculoskeletal problems associated with driving a bus.

McElroy et al., (1993) studied a relationship between career stages, time spent on roads and driver work-related attitudes. This research used career stage and time spent driving on the road as independent variables and bus driver attitudes as dependent variables.

Kompier, M.A.J., (1996) Occupational stress and stress prevention point of view Bus drivers work based on rotating shift which affect their sleep patterns causing fatigue, also fatigue and falling asleep while driving has been identified as one of the major causes of road accidents.

Corkle, J., J. L. Giese, et al. (2001) investigated the effect of traffic calming strategies on driver behavior, traffic flow and speed while driving. Since 1950, the International Labor Organization (ILO) and the World Health Organization (WHO) have shared a common definition of occupational health.

Harwood, D. W. (1990) in Highway research Program, Transportation Research concludes Driver's speeds on the urban streets are mainly influenced by traffic controls, street environments and the interaction of vehicles. Another significant factor that influences the speed is roadway characteristics such as road type, gradient and length of the grade.

Bigelow, P. L. (2010) Research on the health and wellness of commercial truck and bus drivers. He stated that bus drivers must have knowledge and skill of handling the bus driver, the bus route, all regulations, standard and driving procedure and scheduling systems.

Seik, F.T., (1997) suggested that knowledge on how to deal with passenger especially for those with special needs is also important to ensure bus passengers have a good experience with the service.

The present work has been done by considering following objectives,

1. To study the occupational health issues of bus drivers.
2. To summarize some of the health and safety issues facing bus drivers and provide some solutions to how these risks can be reduced.

II. RESEARCH METHODOLOGY

A total of 150 respondents (All are male respondents), were randomly selected for the study of effects of work environment on municipal transportation. The present study mainly based on primary data. Primary data are collecting from the bus drivers by