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CHH.SHAHU INSTITUTE OF BUSINESS EDUCATION & RESEARCH TRUST'S  
COLLEGE OF NON-CONVENTIONAL VOCATIONAL COURSES FOR WOMEN

University Road, Kolhapur - 416 004

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Dr. R. A. SHINDE  
Secretary & Managing Trustee

Date: 25/08/2022

**3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10) (2020-21)**

ISSN Number	Year	Title of paper	Name of the author/s	Department of the teacher	Name of journal
ISSN 0253-7141	2020-21	Comparative Analysis of Soil Quality Of Surface Mined Land In Allipura, Ballari District, Karnataka	Dr.A.R. Kulkarni	Principal, CNCVCW	Indian Journal of Environmental Protection, Volume 41,
ISSN 0253-7141	2020-21	Hydrochemical facies of ground water of Panchganga River basin,Kolhapur,	Dr.A.R. Kulkarni	Principal, CNCVCW	Indian Journal of Environmental Protection, ISSN 0253-7141
(ISSN 0973-4929), Volume. 15, No (3)	2020-21	Studies on Tropics of Fish along Upper TungbhadraChannel,Bal IlariDistrict,Karnataka	Dr.A.R. Kulkarni	Principal, CNCVCW	Current World Environment,
ISSN: 2321-6247	2020-21	Mining Environment and	Dr. A.R. Kulkarni	Principal, CNCVCW	EPRA International Journal of Economic growth and Environmental Issues
ISSN 2348-8301, Volume VIII, Issue I	2020-21	Dinacharya' (daily regimen): An ayurvedic approach for prevention of covid-19	Dr. Neela mJirage Mrs. Shweta Patil	PGDND	International Journal of Humanities, law and social sciences, published by New Archaeological and Geological Society, Kanpur India ISSN 2348-8301, Volume VIII, Issue I



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2349-638x	2019-20	Studies on bird and fish Assemblage in Daroji lake, Ballari , Karnataka	Dr.A.R. Kulkarni	Principal of CNCVCW	Aayushi international interdisciplinary research journal
0257-8050	2019-20	Avifaunal Studies on Magadi lake ShirahattiGadag, Karnataka	Dr.A.R. Kulkarni	Principal of CNCVCW	Em international
0257-8050	2019-20	Add- On courses as co-curricular activities in Non-Conventional Education System	Dr.A.R. Kulkarni	Principal of CNCVCW	Em international
0971-765x	2019-20	Water Quality Indices for Panchaganga River Basin	Dr.A.R. Kulkarni	Principal of CNCVCW	Em international
0257-8050	2019-20	Physico-chemical characteristics of the soil of Pancha Ganga River basin	Dr.A.R. Kulkarni	Principal of CNCVCW	Em international
0257-8050	2019-20	Differential thermal analysis of soil from Pancha Ganga river basin	Dr.A.R. Kulkarni	Principal of CNCVCW	Em international
2349-638x	2019-20	Hydrogeological setting and impact of Sugar industry Effluent on quality of Aquifers of Pancha Ganga river basin Kolhapur Maharastra	Dr.A.R. Kulkarni	Department of Food Technology	Aayushi international interdisciplinary research journal
2349-638x	2019-20	Mineralogical characteristics of the soil of Pancha Ganga river basin from infra-red analysis	Dr.A.R. Kulkarni	Department of Food Technology	Aayushi international interdisciplinary research journal
2349-638x	2019-20	Studies on Malt Instant DhokalaWithTulasi As a Functional Ingredient- A Gujarati Cuisine	Mrs. Shweta Patil, Mrs. SnehalKhan dekar	Department of Food Technology	Aayushi international interdisciplinary research journal
2349-638x	2019-20	Festivals in UttarayanAnd Their Impact on Health	Mrs. A.S. Raibagkar	Department of Food Technology	Aayushi international interdisciplinary research journal



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ISSN Number	Year	Title of paper	Name of the author/s	Department of the teacher	Name of journal
0019-5656	2018-19	Socioeconomic Status and Obstetric History of Post-menopausal Women in Kolhapur City Maharashtra	Ms.S.M. Dhavan	Department of Food Technology	Academic & Law serials
0973-2608	2018-19	Assessment of Nutritional Status of Post-menopausal women with Special Reference to anthropometric & Dietary pattern	Ms.S.M. Dhavan	Department of Food Technology	Academic & Law serials
2349-5166	2018-19	Climate Sensitive Building Forms	Ar. Rutika Tendulkar	Department of Interior Design	Built Environment & Urban Planning 2018
978-93-86435-55-2	2018-19	Monitoring of Built Operate Transfer (B.O.T) Contracting	Ar. Rupali Mirje	Department of Interior Design	Built Environment & Urban Planning 2018
2277-5730	2018-19	Facades For Commercial Building	Ar. Amarr Mestry , Ar. Bela Joshi	Department of Interior Design	Ajanta
2349-266X	2018-19	Study of Awareness about Irrigation System among the farmers	Dr.A.R. Kulkarni	Principal CNCVCW	Research Guru
0970-0439	2018-19	Study of Awareness and Practices about organic farming among the farmers	Dr.A.R. Kulkarni	Principal CNCVCW	Environment & ecology
2349-5165	2018-19	Studies on micro invertebrate population and their relationship with environmental factors in Daroji lake, Ballari, Karnataka	Dr.A.R. Kulkarni	Principal CNCVCW	journal of emerging technologies and innovative research
2349-5162	2018-19	Optimization of Risk allocation in Built operate transfer projects	Ar. Rupali Mirje, Ar. Santosh Alwekar	Department of Interior Design	journal of emerging technologies and innovative research
2349-5162	2018-19	Study of occupational Health Issues Faced by Bus Drivers	Dr.A.R.Kul karni	Principal CNCVCW	journal of emerging technologies and



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# PUNE RESEARCH TIMES

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## CERTIFICATE



This is to certify that Mr. / Ms./ Dr. / Prof. **Ar. NIRALI K GILBILE** has / have Published a Paper entitled- **COMMUNITY SPACES: UNDERSTANDING THE IMPORTANCE OF COMMUNITY SPACES IN URBAN AREAS** in PUNE RESEARCH TIMES An International Journal In Contemporary Studies (ISSN 2456-0960) VOLUME 6, ISSUE 2 (APR-JUNE 2021) Journal Impact Factor 3.18 (IIJIF)

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## COMMUNITY SPACES: UNDERSTANDING THE IMPORTANCE OF COMMUNITY SPACES IN URBAN AREAS

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### ABSTRACT

*Community spaces play a very important role in the social life of communities. Community spaces in urban areas are present in variety of functions, spaces, activities, etc. Increasing migration of people from rural to urban areas has led to the scarcity of open spaces. Urban living also limits the access to open spaces and further restricts the community life of people. It is important for the architects and urban planners to first understand how the community interacts and behaviour of community to design these spaces. Also, the successful protection and development of community spaces in urban areas is required.*

**Keywords:** Migration, scarcity.

### 2.1 INTRODUCTION

#### 2.1.1 Significance of Community Spaces

Community spaces play a very significant role in the social life of all communities. They act as a shared resource that serves the public in organising themselves and where the values and experiences are created. These spaces have many benefits – people display their culture, identities, spread awareness and learn the diversities and differences of various cultures, it gives opportunities for the people, including elders, children and adults to meet and interact with each other. All these various activities ultimately help in creating local attachments which is the most important aspect in the public lives.

### 2.1.2 Aim

To explore the significance of community spaces based on human behaviour and from the studies of other research based programs.

### 2.1.3 Methodology

- Desktop Study - Study research based works, articles and its impact.
- Behaviour of the people with such spaces.
- Explore some ideas that will help encourage in maintaining such public spaces.
- Explore the different standards for community spaces.

### 2.1.4 Evolution of Community Spaces

The earliest city emerged around 6000 years ago and the public squares were established at the crossroads of trade routes. Gradually, these public spaces started getting importance and further improvements were made and became common grounds which were intended to support all political, social and economic activities and provided a platform which was accessible to all the people.

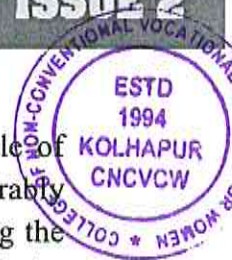
Some of the examples of the earliest public spaces in history are: The Greek Agora, The Roman Forum, The Medieval Market Square and The Renaissance Plaza.

In the modern era, public spaces witnessed a very drastic evolution. The planning of the city developed a close relationship between open spaces and surrounding area. Also, there were new public spaces for entertainment and leisure. Further, spaces like, shopping arcade, bazaar, and departmental stores also emerged.

In the contemporary era, the community spaces needs to be designed in such which has to anticipate the changed and changing lifestyle of the urban population and living.

### 2.1.5 Standards of Community Spaces

Community spaces should be in coordination with the type and scale of development which will enhance and support the public values. There are variety of community spaces depending on many factors which includes active spaces like courtyards, picnic areas, plazas and passive spaces. Each of these spaces should have inviting character and designed in such a way which will help people navigate easily. Also, these spaces should be multi – functional and able to accommodate variety of programs and activities.



Another important aspect of community spaces is the integration of the location, scale of neighbouring buildings and its uses. The location of community spaces should be preferably at ground level and should be accessible and visible from Public Street. While orienting the internal spaces, there should also be balance between sun and shade. The scale of all the spaces needs to be appropriate as it should not feel empty or barren when not in use. Also, wherever possible, outdoor areas should be provided for the opportunity of connecting with nature. This also means that the preservation of adjacent nature should be considered. Elements like water bodies, sculptures, landscapes (hardscape and soft scape), artwork, and lighting should be provided which will make the navigation more interesting and also appeal the senses.

### 2.1.6 Understanding Community Spaces

Community spaces exist in a variety of types within rural or urban fabric. Protecting, maintaining and developing these spaces is the key element for sustainable community spaces in urban or rural fabric. To do this, it is important for all to first understand how the community spaces work and its intersections with the living beings.

Community spaces represent public values – social and economical and have a significant role in the well – being of individuals. These spaces are appreciated and accepted on how much appropriately the accessibility, characteristics, amenities and provisions have been given in these areas. Other than only accessibility, provisions and characteristics, the green areas in community spaces are also one of the important aspects in terms of the designing of community spaces.

### 3.1 CONCLUSION

Community spaces embrace a wide range of variety of spaces. Their uses, structure and the overall design varies from neighbourhood planning to the metropolitan scale. In today's era, these spaces are viewed as resources for urban establishments and also improvements. Also, with increasing urban population, the importance and the quality of community spaces is also decreasing. It is lacking in liveliness, amenities, ambience and maintenance, because of which these spaces are not much inviting and losing its importance. These spaces are the fundamental part of any urban area that unifies all the urban informal and formal activities and should be designed taking all these aspects into consideration.

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- 3) The Role of Urban Design in Developing Communities by Dr Bob Giddings
- 4) Importance of Urban Squares as Public Space in Social Life A New Design of Fisktorget in Karlskrona City by Armin Abbasian.
- 5) Urban Green Space Strategy – an Important Tool for Effective Urban Green Space Planning
- 6) SPACE AND COMMUNITY - THE SPATIAL FOUNDATIONS OF URBAN NEIGHBORHOODS An Evaluation of Three Theories of Urban Form and Social Structure and Their Relevance to the Issue of Neighborhoods by Yodan Rofé.
- 7) The Value of Public Space – CABE SPACE
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**UTILIZATION OF TERRACES FOR GREEN FUTURE: A REVIEW in**  
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## “TERRACE GARDENS” UTILIZATION OF TERRACES FOR GREEN FUTURE: A REVIEW

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### ABSTRACT

*In today's urban environment high rise buildings, parking areas, network of roads have acquired major urban land. In such congested environment rooftop and terrace of buildings provide a valuable potential source of outdoor space accessible to users of building. (A. Patel, R. Yadav, B. Singh, 2019) The purpose of this study is to give an insight into what motivates middle-class citizens to engage in gardening. The Indian middle classes are described as well educated with busy, stressful lives and with a high resource use due to consumption, however, also with increasing awareness and practices of pro-environmental behaviour. (Mathur 2010) Balcony and terrace gardens give pleasure to city dwellers and provide an opportunity for enhancing creativity as well psychological benefits. In addition, they change the visual appearance of the building, screening from neighbors, and conceal unwanted pipeline and unappealing scenery (Green, 2004). The findings of this article are based on literature review. The study concludes that, regardless of the type of home, both Individual house and apartment respondents prefer a terrace Gardening for the purpose of relaxation and decreases recorded in global Warming is the greatest benefit.*

**Keywords:** Roof garden, Sustainability, Roof Top Gardening, eco-design, Urban Gardening, Benefits of Terrace Garden

### INTRODUCTION

Urbanization is not an option but a compulsion. People residing in the city, finds this life very hectic as there is a very rare chance to feel the nature. So, in order to enjoy the country side

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within the city, many people have started their own green environment either in the roof or balconies or any unused places. Moreover, the forgotten places or the ones that are left barren due to some causes are utilized to grow edible foods. These have helped in reducing the ecological footprints in the houses or in the industries and a healthy community to live in. (*Pratistha Mishra, 2013*) Terrace gardening is a living work of art in which the plants are arranged on a terrace. It also consists of indoor or outdoor plants. Many cities have implemented measures to ensure that new buildings have green roofs, but older buildings have been more widely ignored. In many different nations and in different climates, green roof technology has its roots. A building protected by a plant ensures adequate protection against hot or cold weather. In sustainable architecture, green roofs have become an essential feature. In reality, green roofs are expanding globally. The trend of terrace garden is not new, for centuries it has been common to use rooftops as a living space/Recreational space. (*A. Patel, R. Yadav, B. Singh, 2019*) Another advantage of green roofs is the possible transformation of roofs in high urban density neighborhoods into recreation areas, private as well as semi-public or even fully public. (*Manfred Kohler, Michael Laar, Marco Schmidt, 2004*) Green roofs can be divided into three categories:

1. Spontaneous green roofs
2. Extensive green light weight roofs with low maintenance, without additional irrigation and fertilizing.
3. Intensive green roofs = roof gardens.

Extensive roofs are those that require little maintenance, are established over the majority of the roof area and generally contain low-growing, drought- and extreme weather-tolerant plants; Intensive roofs require high maintenance, may or may not cover the majority of the roof and usually contain a variety of plants, such as small trees or shrubs. The term rooftop gardens (RTGs) will be used for gardens built on a roof that has the same material constituents as a backyard garden planted with small-scale crops. (*Lisa Barreiro, 2012*)

The environmental benefits observed include storm-water runoff management, energy conservation through temperature stabilization, and urban habitat preservation, although other benefits such as aesthetic value and biodiversity have also been noted. (*Lisa Barreiro, 2012*)

The factors which make roof gardens important part of architecture throughout the world is:-

1. Full use of terrace, which is normally a discarded area in crowded cities. Maximum meaningful use of minimum available space.

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2. An economical way of balancing green space with uncontrolled growth of cement structure in urban areas. (*A. Patel, R. Yadav, B. Singh, 2019*)

### Statement of Problem:

The first problem we have is the high cost of living in limited space. And also in order to minimize pollution and noise, CO2 emission absorption and urban heat control, it is important to contribute to the enhancement of biodiversity in the urban environment and to resolve the lack of vacant land for cultivation. The Rooftop Gardening concept is the only successful measure that has been proven to be practiced and established day by day throughout the world. For many years, the construction of the roof garden has been without a standard model and a standard process, exposing many defects and shortcomings. For example: cannot prevent leakage, loss of soil and water, the serious pollution, the unreasonable arrangement of plants, the exceeds of load, the exceeds of the construction cost. Especially old building, because of the lacking consideration, the roof in the old building was not suitable for the construction of the roof garden. Due to the original design without considering the load and roof garden drainage, makes the structure safety reserve is insufficient, drainage pipe diameter is not enough, the design difficulty is greater. Once these problems are solved, the construction of roof garden in our country will be developed rapidly. (*Wenjun Wang, 2018*)

### Objectives

1. To know the factors inspired for terrace gardening.
2. To delineate a general feature of rooftop gardening.

### Scope:

The purpose of this study is to give an insight into what motivates middle-class citizens to engage in gardening. The Indian middle classes are described as well educated with busy, stressful lives and with a high resource use due to consumption, however, also with increasing awareness and practices of pro-environmental behaviour. (*Mathur 2010*) Serious environmental problems have become obstacles to the development of the city, how to expand the green area, reduce the pollution of the environment to improve the urban ecological environment, promote the sustainable development of the city, has become a top priority in the construction of cities today.

### Methods:

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The findings of this article are based on literature review. The literature reviewed is a mix of articles and papers about the study of design of terrace garden, basic study of plant materials, structural implication and Construction techniques.

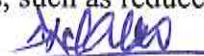
**History of Roof Top Gardening Concept:** The earliest dominated rooftop gardens ensure were the hanging gardens of Semiramis in what is now Syria, considered one of the seven wonders of the ancient world. The tribal or local habitants are use to cultivate by the way of “Jhum Chas” in the hilly region lack of cultivated land from the ancient era beneath which sometimes caves a found. Humans have grown plants atop structures since antiquely. The Ziggurats of ancient Mesopotamia (4th millennium BC – 600 BC) had a planting of trees and shrubs on aboveground terraces. The modern Roof Top Gardening concept developing every day based on ancient roots. *(Sankar Kumar Acharya,2009)*

### Terrace gardens:-

A terrace garden is a garden which is established on a terrace, roof, or patio, usually in a house where there is limited gardening space. Terrace gardening is a home gardening practice, and characteristics of home gardens are that they are privately managed by a family *(Guitart 2012)*. These types of terrace gardens are especially popular in urban areas. Green roof tops with living vegetation provide green spaces, mitigation urban heat island, energy conservation, improving the air quality and increases biodiversity *(Getter and Rowe, 2006; Snodgrass and Snodgrass, 2006; Luckett, 2009)*. Balcony and terrace gardens give pleasure to city dwellers and provide an opportunity for enhancing creativity as well psychological benefits. In addition, they change the visual appearance of the building, screening from neighbors, and conceal unwanted pipeline and unappealing scenery *(Green,2004)*. Terrace and balcony gardens are highly popular in urban middle and upper class families in MMR and were found as a sort of leisure activity for some people. Suspicion about the quality of vegetables available in urban markets and recycling of household waste is the main motivation for these farming *(Vazhacharickal and Buerkert, 2011)*.

Across the world, the Rooftop Gardens are a common feature of the modern city. To reduce pollution and noise, the absorption of CO<sub>2</sub> emissions and controlling the urban heat, need to contribute to the biodiversity enhancement in the urban environment, meeting the scarcity of vacant land for cultivation. The idea of Rooftop Gardening is the only proven an effective measure being practiced and developing day by day throughout the Globe. The concept of ecological citizenship uses the metaphor of “ecological footprint”. In a different part of the world when, at the turn of the 20th-century, gardens were installed on roofs counteract the damage of solar destruction on roof structures with environmental policies and technologies on storm-water management, energy, conservation, and urban habitat provision. Productive green roofs combine food production with ecological benefits, such as reduced rainwater run-

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off, temperature benefits such as potential reduction of heating and cooling requirements, biodiversity, improved aesthetic value, and air quality. Rooftop Gardening can be placed on individual homes, institutional and office buildings and roofs of restaurants and serve either home consumption, use of fresh produce in restaurants or institutional kitchens or commercial production. Overheating cities of due to the dense concentration of asphalt (including rooftop and pavements) and global warming that absorbs solar radiation. Rooftop Gardening is undoubtedly is much more essential and viable method especially for the cities overcrowded. To utilize unused space at rooftop, to consume fresh organic food, to utilize leisure and idle time, to save roof from damage, to make the environment cooler, to beautify and decorate the atmosphere' to get fresh food without much effort or waste of time, to convert organic waste into organic manures' to help the nation enrich. (Sankar Kumar Acharya, 2009)

### Benefits of Roof Gardens

1. **Ecological Benefits**-It is very rare that one gets a chance to return what environment has given to us. One of the first ecological benefits is that the plants absorb pollutants that rainwater brings with it. This way the heavy metals and nutrients are absorbed by soil instead of wasting away. Similarly, Greenrooms are very beneficial in reducing air temperatures. These also increases humidity levels in the surrounding areas. (Pratistha Mishra, 2013 )
2. **Economic Benefits**-The use of wasted space can be one of the benefits. As it can be costly when needing a garden at ground level, unused roof tops can save that cost. Similarly, the building is beautified which can increase the number of people interested in the building. As the food is produced within the community, one can buy food from the lo-cals. The result is transportation costs and time are saved. Also, one can enjoy the fresh food. (Pratistha Mishra, 2013 )
3. **Aesthetic Benefits**-Like ecological and economic, there are also aesthetic benefits of roof gardens. With the green surrounding, it is easier to forget the crowd of the city. The greenery brings the countryside memories or feelings alive. Similarly, fresh air can give a positive energy. (Pratistha Mishra, 2013 )

### Construction of Terrace Garden-

There are three distinct layers in a green roof from the bottom, namely:

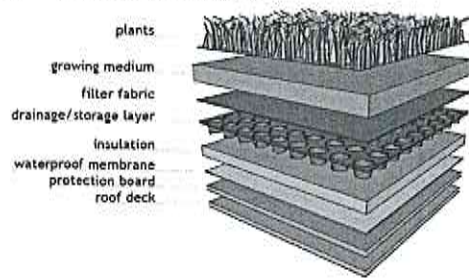
1. Structural layer
2. Growing media

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### 3. Vegetative layer



**Roof Deck** - The most important layer on a green roof is its decking, which can be concrete, wood, metal, plastic, gypsum or composite as it determines whether the structure is capable of taking the load of the green roof.

**Waterproofing** - The primary purpose of waterproofing is to keep the unwanted moisture from rain and condensation away from the structure below.

**Insulation**- The roof is the primary location for heat transfer and the insulation restricts the transfer of heat energy through the roof by creating a barrier between spaces of different temperature.

**Protection Layer** - As green roofs contain living and growing materials, a protection layer and a root barrier are one of the most important elements of the assembly . -As roots grow they can penetrate the waterproofing membrane and create leak locations. The root barrier placed above the membrane ensures that no roots pass through and harm the membrane . -A protection layer shields the waterproofing membrane from damage after it has been installed.

**Drainage and retention Layer** – A drainage course allows moisture to move laterally through the green roof system. It prevents oversaturation, ensures root ventilation and provides additional space for the roots to grow . -It is a porous, continuous layer over the entire roof surface just above the concrete slab.

**Root Permeable filter Layer** – This layer separates the growing medium from the drainage layer and protects the medium from shifting and washing away. -It restricts the flow of fine soil particles and other contaminants while allowing water to pass through freely to avoid clogging.

*(Akash Patel, Rohit Yadav and Bhagirathi Singh,2019)*

#### Cost Factors:-

One of the biggest factors in retrofitting an existing roof into a green roof is cost, with many researchers concluding that intensive roofs are more expensive than extensive roofs *(Rowe*

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2010), (Carter and Keeler 2008). Some of these costs can be reduced by factoring in the return on investment of the roofing system as a vegetated roof increases the lifespan of the roofing membrane due to a more stable temperature over the course of any given year (Liu and Baskaran 2005; Carter and Keeler 2008). By utilizing reused or recycled materials or by innovative design, other costs can be minimized or eliminated.

## CONCLUSION:

Now is the time of age when more attention should be given to conservation than consumption. The main theory behind this project was sustainability. The main motto of this project is to build a place where all people can meet and improve social contact, where healthy food is grown that teaches individuals to learn healthy decisions and to teach them to save the world for another generation. The study concludes that, regardless of the type of home, both Individual house and apartment respondents prefer a terrace Gardening for the purpose of relaxation and decreases recorded in global Warming is the greatest benefit.

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# DISCOVERING HEALTHY FOODS THROUGH FOOD PROCESSING AND NUTRITION




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Published 2020: PP: 256-263

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ISBN: 978-93-5406-329-9

## Ghiya Tori Combo for Junk Food: A Critical Appraisal

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### ABSTRACT

The purpose of the paper was to assess the functional properties of Ghiya and Tori vegetable gourds combo for Junk food & the validated health claims so as to help the future researchers to locate the gaps. However, emphasizing on the scientifically available reports was required to make information available in a nutshell to the health-conscious consumers, as well as the researcher from the area of functional foods and nutrition. The paper is a mini-review of scientific findings in different studies on Ghiya and Tori vegetable gourds combo for Junk food gourd vegetables. The approach to information collection was finding the research gaps and potential areas for future work with a nutritional perspective. Ghiya and tori vegetable gourds have been extensively studied, and several health benefits and functional components, and the therapeutic benefits therefore hence, there lies a scope for researchers. The scarcity of scientific reports compared to the traditional usage and folkloric beliefs was a limitation. Understanding the nutritional potential of Ghiya Tori gourd vegetables from scientific reports may influence both the work areas and consumers in the appropriate direction.

**KEYWORDS:** Agricultural products, Benefits, Vegetables, Health, Food

### INTRODUCTION

With changes in lifestyle, there has been an increase in the consumption of junk foods (JF) among school aged children (SAC). High consumption of JF has been identified to have a contributory role in the increasing trend of overweight in India among SAC since (2001-2010). High consumption of JF has also been associated with increased risk of early development of diet related non-communicable diseases, including hypertension, dyslipidemia, impaired glucose tolerance, metabolic syndrome, musculoskeletal disorders, and cancers, indicating burgeoning health concerns in the near future for SAC. JF are

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ISBN: 978-93-5406-329-9

## Development of Instant Weaning Food from Legumes and Dehydrated Vegetable Powder

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### ABSTRACT

The study was aim to develop instant weaning foods in combination of legumes and dehydrated vegetable powders. The study was conducted on the physico-chemical properties of raw materials (Split green gram dhal, whole green gram, Green pea, Pumpkin, Carrot, Sweet potato). The soup was prepared using different concentrations of legume and vegetable powder. The formulated instant weaning Legume powder and dehydrated vegetable powders were prepared by using pre-treatments and dehydration methods. Standardization of formulation were done by preparing four different samples S1, S2, S3 and S4 with the various concentrations of dehydrated powder considering its physico-chemical properties. S2 sample was selected for final product. The final product was formulated considering protein content or RDA/day requirement of baby within age of 9 months to 1yr is 1.6gm which was satisfied by analysis of 1.7g protein with fibre content to negligible amount 0.193g. In comparison with other samples, Sample S2 was selected to give appropriate amount of protein, taste, colour, flavour, consistency and appearance in reference to above specified RDA. Hence the developed instant weaning food has the potential to overcome the protein requirements of infants having traditional ingredients and shelflife of 6-12 months at room temperature.

**KEYWORDS:** Weaning, legumes, dehydrated vegetables, green gram dhal, protein, RDA.

### INTRODUCTION

Weaning is a gradual process the infant becomes accustomed to the adult diet. Weaning foods should be given to the baby at about the age of four to six months. At four months most



Published 2020: PP: 102-112  
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ISBN: 978-93-5406-329-9

## Formulation of Mead to Study Its Characteristics: A Novel Finding In Alcoholic Beverage

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### ABSTRACT

Wine has been a very popular beverage of mankind for many decades. It is natural fondness to drink wine for its wonderful taste, its nutritional properties and not the least but also the medicinal properties. Actually there is no clear idea about the discovery of wine but there is ancient Persian fable which says the women as discoverer of wine. In Mediterranean region, wine is most preferred beverage which is consumed along with the meal. The main raw material for wine preparation is grapes (both green and black), they are used since it contains pulp, juice, sugar, acids, tannins and minerals. Addition of yeast to the juice increases strength and cane or beet sugar increases the alcoholic content. Sulphur dioxide is added during fermentation to control the growth wild yeast and other osmophile bacteria. Mead is fermented using main 3 basic ingredients i.e. honey, water and yeast. This beverage has been anciently prepared in Europe, Africa, and Asia for many decades. Infusion of herbs into sweet made it more acceptable and different varieties were able to improve digestion and relieve the depression. Specific herbal mead are called *Metheglin* derived from *Welsh* were which means medicine. There are varieties of mead e.g. sweet, dry, still and sparkling. The present study was aimed at the production and characterization of mead from raw honey. Chemical analysis of developed mead contains glucose-290µg/ml, fructose-14µg/ml and alcohol concentration is 10.6%ABV. The conclusion was given as mead was prepared from honey using yeast culture as fermenting agent, honey was used since it contains 2 sugars i.e. glucose and fructose. Alcohol content was determined to 10.6% ABV using potassium dichromate.

**KEYWORDS:** Wine, Mediterranean region, Tannin, Sulphur dioxide, Osmophile Bacteria, Metheglin, Welsh, Raw honey, Mead, Glucose, fructose, yeast culture, potassium dichromate.

Published 2020: PP: 224-234  
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ISBN: 978-93-5406-329-9

## Understanding the Conventional Functional Foods for Making Lives Healthier: A Critical Review Defining A Nutritional Perspective

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### ABSTRACT

Functional foods are foods which contains some active ingredients that have potentially positive effect on health apart from the basic nutrition. Functional foods can promote optimum health and reduce the risk of diseases. They may prevent nutrient deficiencies and promote proper growth and development. The concept is originated in Japan in 1980s when the government agencies have started approving foods with proven benefits for better health of the population. Functional foods are usually separated into two categories i.e. conventional and modified. Conventional foods are natural, whole food ingredients rich in vitamins, minerals, antioxidants etc. Modified foods are fortified with additional ingredients like vitamins, minerals, probiotics or fibres to increase its health benefits. The present study aims at highlighting on some conventional functional foods like Quinoa, Kale, Blackcurrant, Avocado and Olive oil. Quinoa is a grain crop that is grown for its edible seeds. It is technically a pseudo-cereal that contains metabolically active proteins such as albumins and globulins which accounts for 25-30% of the weight of a Quinoa seed. Quinoa also contains high amounts of flavonoids i.e. kaempferol and quercetin. Kale is a cruciferous vegetable of Brassica oleracea family. It contains chemical called Glucosinolates and sulphur containing compounds i.e. isothiocyanates and indole-3-carbinol which are known to have anti-inflammatory and anticancer effects. Blackcurrant is a woody shrub in the family Grossulariaceae grown for its berries. It contains anthocyanins, polyphenolic substances, antioxidants, ascorbic acid and gamma-linolenic acid (GLA) which are known to boost immune system. Avocado is the fruit of Avocado tree, scientifically known as Persea Americana. Avocado contains oleic acid which has been associated with reduced inflammation and shown to have beneficial effects on genes linked to cancer. Olive oil is a

Published 2020: PP: 216-223  
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ISBN: 978-93-5406-329-9

## Study on Formulation of RTC Manchurian Mix

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### ABSTRACT

Studies were carried out for the development and formulation of RTC Manchurian Mix from a premix of Manchurian balls consisting of wheat flour, germinated sprout powder (moth bean powder and green gram powder), corn flour, dehydrated vegetables (cabbage, carrot, capsicum), and the formulated Manchurian mix dried sauce consisting of spring onions, onions, green chilies, tomatoes, soy sauce, red chilies, sugar, citric acid, pepper and salt. The premix has better nutritional attributes as it is rich in protein, iron, and calcium and phosphorous. It consists of 10.79 gm of protein, 3.61mg of iron, 0.20 mg of calcium and 0.09 mg of magnesium per 100 grams. The sensory analysis was carried out by a semi trained panel by using 9 point hedonic test. Wheat flour premix was much preferred by the panelist rather than refined wheat flour premix due to its nutritional qualities and good taste. There is no external addition of artificial MSG. The preparation of balls requires rehydration of vegetables and kneading with flour mix and then frying. Whereas, the preparation of sauce requires addition of water and stirring for 5 minutes. The packaging of the pre-mix was done in food grade polythene bags which were sealed air tight. The shelf life of the product is 6 months.

**KEYWORDS:** Instant, dehydrated vegetables, RTC, sprout flour.

### INTRODUCTION

The Indo Chinese cuisine has originated from the Chinese people of Kolkata and Chinese food is still popular there. Most of these people are Hakka origin; however, many of modern Indian dishes Chinese cuisine bear little resemblance to traditional Chinese cuisine. Looking at the popularity of the dish we decide to modify Manchurian dish into a healthy one. Formulated RTC Manchurian Mix is a blended form of all ingredients. It is ready to cook product and it is the result of adaptation of Chinese cooking and seasoning techniques to suit Indian taste. The materials used in this product are processed and prepared by dehydration

Published 2020; PP: 120-130  
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ISBN: 978-93-5406-329-9

## Serving A Baked Multigrain Kachori Fortified With Drumstick Leaves and Curry Leaves: Reformulation of A Popular Indian Snack In A Healthy Way

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### ABSTRACT

India is a diverse country in terms of geographical and climatic conditions and also in terms of its traditions. The traditional Indian cuisine is highly influenced by all these diversified aspects. The traditional Indian cuisine is rich and has enormous number of snack items. Kachori is one of the most popular Indian snacks originated from Northern part of India. The traditional Kachori is made out of refined wheat flour with a stuffing of Indian spices and is mostly a deep fried snack item. The main ingredient of Kachori i.e. refined wheat flour is not much acceptable when it comes to the nutritional value. Also the cooking method of Kachori i.e. Deep frying is found to increase the saturated fat content of the snack. Replacing the refined wheat flour with multigrain flour (wheat flour, oat's flour, green gram dal flour) may increase its nutritional value in terms of protein and fibre content. Fortification of this flour with drumstick leaves and curry leaves can enhance the micronutrient content of Kachori. Modification of cooking method i.e. Microwave cooking instead of deep frying can help in reducing total saturated fat content of the snack. The present study was aimed at reformulation of this popular Indian snack and had revealed following results after sensory and proximate analysis of developed Kachori: Moisture- 9.63%, Carbohydrates- 34.72%, Crude fat- 31.42%, Crude protein- 17.94%, Total minerals- 4.02%, Crude fibres- 2.27% and Energy- 493.42 kcal. The bottom conclusions of the study have shown that the reformulated Kachori was nutritionally superior as compared to the traditional one and was also sensory wise acceptable. Further research is needed to obtain shelf life of the product.

**KEYWORDS:** Indian cuisine, Kachori, refined wheat flour, deep frying, multigrain, micronutrients, fortification, microwave cooking, reformulation, proximate analysis, sensory analysis, shelf life.

Published 2020: PP: 8-22  
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ISBN: 978-93-5406-329-9

## Utilization of Underutilized Vegetables in Ready-To-Eat Vegetable Curry Mix with Vegan Meat Balls

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### ABSTRACT

**Introduction:** Curry is a popular south Indian dish. It is made with adding many species and seasoned in ghee. Tray drying is one of the conventional methods of dehydration. **Objectives:** This present study aimed to develop Ready to Eat vegetable curry mix with vegan meat balls to reduce difficulty of raw material availability and to save the time of preparation and to optimize the use of underutilized and waste from vegetables which are embedded with essential vitamins, minerals, fibres and especially rich in calcium and iron. **Methodology:** Instant curry mix is formulated with the use of cauliflower, calocasia, betel, pumpkin, reddish and curry leaves, vegan meat balls and dehydrated carrot. Prepared curry was dehydrated in tray dryer at 65-70°C for 5-6 hrs. Vegan meat balls were prepared with the use of soya chunks, potato and wheat flour. Final product was evaluated on 9-point hedonic scale. The sample which was ranked highest in sensory evaluation was tested chemically. The proximate analysis of final product revealed that per 100gm of serving size of curry gives 225 Kcal of energy, 50.26 gm of carbohydrates, 7.1 gm of fat, 6.05 gm of protein, 176 mg of calcium and 6.50 gm of iron. The moisture percent in final product was 5.24% moisture so it could be stored for longer period.

**KEYWORDS:** Underutilized vegetables, Cauliflower, Calocasia, pumpkin, betel, curry, Radish leaves, Tray dryer, vegan meat.

### INTRODUCTION

Vegetables are low in calories and high in fiber content. They are also best source of antioxidants and other phytonutrients. An important advantage in using dehydrated

Published 2020: PP: 205-215  
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ISBN: 978-93-5406-329-9

## Bioengineered Fruits: Genetics, Safety & Health - An Overview

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### ABSTRACT

Genetically modified foods or genetically engineered foods or bioengineered foods are the foods produced from the organisms that have had changes introduced into their DNA utilizing the structure of genetic engineering as opposed to traditional cross breeding. There is a scientific agreement that currently available food developed from genetically modified crops poses no greater risk to human health than conventional food. There are several genetically modified food products available in markets, some of them are directly consumable but most of them are processed to different form or smaller food ingredients. Those foods are alfalfa, argentine canola, chicory, cotton, melon, papaya, pineapple, plum, poplar, soybean, sugar beet, potato, tomato, maize, rice, wheat, etc. The present review aims at underlining on some of genetically engineered foods like Tomato, Pineapple, Papaya and Melon. Tomato is excellent model for genetic transformation of the required genes. The single tomato of new variety was made by introducing a gene from the model plant *Arabidopsis thaliana* called AtMTB12 into the tomato genome. Del Monte produced the pink pineapple, simply has some genes toned down to keep the flesh of fruit pinker and sweeter. It has been genetically engineered to produce lower levels of the enzymes already in conventional pineapple that convert the pink pigment Lycopene to the yellow pigment beta carotene. Papaya was the first genetically modified fruit to be grown in commercial production. Two main natural and artificial genetic transformation processes have been used to obtain melon as a transgenic plant. This review address some major concerns about the safety, health and nutrition engaged with GM foods.

**KEY WORDS:** Genetically modified foods, bioengineered food, genetically engineered food, genetic transformation, safety & health, tomato, pineapple, papaya, melons.

Published 2020: PP: 94-101  
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ISBN: 978-93-5406-329-9

## Formulation of Instant Soup Mix with Utilization of Raw Banana and Waste from Cauliflower

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### ABSTRACT

**Objective:** This present study aimed to develop dehydrated instant soup mix to reduce the difficulty and to save time in preparation of soup and to optimize utilization of cauliflower stalks, which is normally thrown out as waste. **Methodology:** The ingredients used in the instant soup mix are raw banana (as a basic ingredient and replacement for starch), dried cauliflower stalks, dried peas, dried carrot and flavoring agents. The ingredients such as Cauliflower stalk's, raw banana, onion, garlic and peas were dehydrated in a oven (Tray dryer/Cabinet Dryer) using established procedures. The optimum concentration of cauliflower stalk's powder, banana powder (starch), whole milk powder was determined by carrying out preliminary trials using 9 point hedonic scale sensory evaluation tests. **Result and Conclusion:** The rehydration ratio of instant soup mix: water was 1:12.5. Proximate analysis revealed that the soup mix provides 67.40 Kcal Energy, 0.46gm Fat, 1.64gm Protein, 1.13gm Fiber, 6.06gm Carbohydrate and 4.0% Moisture. The result of the shelf life evaluation studies namely moisture content and sensory evaluation revealed that soup mix could be stored for 6 months without affecting their quality.

**KEYWORDS:** Instant mix, Dehydrated Vegetables, banana starch, soup mix

### INTRODUCTION

Increase in population and accumulation of industries in a particular area made more people to stay alone after education for employment. Less time is available for them to prepare food. Hence most of them consume what is available or food that requires less preparation time. Hence an attempt is made to prepare soup which requires less time for preparation. As the formulation and development of nutritious complimentary foods from locally and readily available raw materials have received a lot of attentions, the present research work aimed to prepare and supplement dried cauliflower stalk soup (instant soup mix) with cauliflower stalks, banana starch and evaluating their sensory properties [1].

Published 2020: PP: 264-278  
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ISBN: 978-93-5406-329-9

## A Case Study on Corporate Social Responsibility and Environment

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### ABSTRACT

Community development through Corporate Social Responsibility (CSR) is one of the statutory requirements for every business houses. It is essential to maintain balance between economy, environment and people. The World Business Council for Sustainable Development stresses, "CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families, as well as of the local community and society at large. Dhangarwadi bauxite mine of Hindalco Industries Ltd. is involved in the production of bauxite for captive consumption for the manufacturing of aluminum at their Belgaum Plant. Dhangarwadi bauxite mine is an open cast mechanized mine operating since 2008. Company has obtained Environmental Clearance from the Ministry of Environment and Forests for the production of 0.6 million tonnes of bauxite per year and also consent to operate from the Maharashtra Pollution Control Board. In accordance with statutory requirement company has defined its CSR policy and spends minimum 2% of net profit on CSR activities in the buffer zone of 5km radius around the mine.

**KEYWORDS:** Bauxite Mine, Corporate Social Responsibility, Company's act , Ecological balance Policy, Sustainable Development

### INTRODUCTION

The concept of Corporate Social Responsibility (CSR) is not new in India. It emerged from the 'Vedic period' when history was not recorded in India. In that period, kings had an obligation towards society and merchants displayed their own business responsibility by building places of worship, education, inns and wells. Corporate Social Responsibility has been defined and conceptualized in several ways during the past four centuries following a process of analysis, debate and scholarly confrontation around the theme. The concept 'Corporate Social Responsibility' (CSR) refers to 'soft', voluntary self regulation adopted by



Published 2019: PP: 277-284  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

## Retrofitting of a Residential building in Hot and Dry climate by using Passive Design strategies

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### ABSTRACT

Buildings in developing countries are often designed without taking sufficient account of the climate. Factors such as the urban surroundings or site characteristics, orientation and architectural design of the building, choice of building materials, etc. are not given enough importance. Consequently buildings often have a poor indoor climate, which affects comfort, health and efficiency. The problem is found in dwellings as well as workplaces or public buildings. As living standards rise people want to install heating and/or cooling equipment to improve thermal comfort. For buildings not adapted to the climate, the amount of energy to run the equipment, and its cost, will be excessively high, and it will have a negative impact on the environment. A good or at least acceptable, indoor climate can often be achieved with little or no extra input of energy. The objective of this study is to present information about the climatic design of buildings today, using passive techniques. It explains central concepts in climatic design and gives recommendations on how to carry out the design or retrofit an existing building in hot and dry climates. The focus is on interior design, but building scale design is also considered. This study aimed at identifying passive design features for a residential building in hot and dry climatic zone through extensive literature study that can be incorporated in building interiors to make them energy efficient.

**Keywords** passive strategies, retrofit, cooling requirements, human comfort, indoor air quality.

### INTRODUCTION

Renovation, retrofit, and refurbishment of existing buildings represent an opportunity to upgrade the energy performance of building assets for their ongoing life. The design that maintains a comfortable temperature within the building using the climate and natural elements to get the optimum benefit and to reduce or eliminate the independence on

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Published 2019: PP: 285-291  
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ISBN: 978-93-5351-464-8

## Study of Laterite: A Sustainable Building Material in the Context of Southern India

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### ABSTRACT

Shelter is one of the prime needs of every human, especially low income group in India. A sustainable and affordable shelter for poorer is a challenge in front of engineers and researchers. Use of modern building materials like cement, concrete, steel and plastic has already crossed its limits in terms of energy consumption and expenditure, making it unaffordable to low income group. Also it has resulted in adverse effects on environment like pollution and global warming, creating major health issues among people. It has given rise to non eco friendly concrete jungles which are ever encroaching the rural parts of India. To resolve this problem efforts are to be made to use natural and sustainable building materials for construction. This paper is an attempt to study and explore 'Laterite', locally known as 'Chira', one of the sustainable building materials commonly found in the southern part of India.

**KEYWORDS** Sustainable, eco friendly, affordable, natural, Laterite, environment  
Characteristics of Laterite,

### INTRODUCTION

"An ideal house in an ideal village will be built using materials that are found within 5 miles radius of the house. - Mahatma Gandhi.

Construction of a sustainable shelter in minimum expenditure is a present day challenge. Earlier people built houses using locally available building materials like stones, mud, wood, bamboos, etc. The stones used for building varied from places to places in India depending upon its availability in close proximity, since transportation was a major problem.

Laterite is a cost effective, energy efficient and environment friendly material abundantly found in southern region of India including south west parts of Maharashtra, Karnataka, Tamilnadu and Kerala. It is a Ferruginous rock commonly considered to have formed in hot

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## Vertical Greening Systems for Facades as a new Approach towards Sustainability

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### ABSTRACT

The built environment is a major consumer of energy across domestic, industrial and service sectors. The construction and operation of buildings are responsible for about one third of the energy use and one half of the electricity use is associated with protection from the external climate and operation of systems necessary to give the occupants a comfortable indoor environment. For various reasons, sustainability today is producing an important and interesting approach between architecture, interior and the environment. Architects and interior designers have started to address the quest of energy demands in the buildings. One of these approaches is façade greening which started to take important place in last decade. Vertical greening can provide a cooling potential on the building surface which is very important during summer time in hot climates. This has effect on the inner climate in the building by preventing warming up the facade. This research paper focuses on the types of façade greening and its benefits and their thermal effect.

**KEY WORDS** green facades, energy efficiency, sustainability etc.

### INTRODUCTION

The built environment is a major consumer of energy across the domestic, industrial and service sectors. The construction and operation of buildings are responsible for about  $\frac{1}{3}^{rd}$  of the energy use  $\frac{1}{2}$  of the electricity used in most industrialized countries. A large share of the energy use is associated with protection from the external climate and operation of systems necessary to give the occupants a comfortable indoor environment within the challenges of energy crisis and climatic changes architects and interior designers started to develop new approaches to address the quest of energy demands in buildings. One of the approaches is facade greening which started to take important place in last decade.



Published 2019: PP: 301-316  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

## Biomimicry

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### ABSTRACT

Nature is best friend of man. It is inspiration for many artist, poets, sculptors, biologist; one always tries to find roots in nature. Nature has been the best and greatest teacher...As it knows...What works? What is appropriate? What lasts?

Today, with the present level of energy consumption and rapid urbanisation we are exceeding the capacity of natural system. Now a day's world is facing issues of global warming, pollution, ozone depletion, clean drinking water, resources depletion, deforestation, soil degradation, and waste, extinction of flora and fauna and population. The two areas of imminent resource stresses-fossil fuels and climatic instability are both directly influenced by decision made by architects and designers. Building consumes half of all fossil-fuels energy and our decision as building designer are crucial to survival not just for mankind, but for the entire ecological system.

There is a dire need to develop new sustainable technologies to deal with our present day crises and those we will encounter in the near future. Nature being the oldest friend of man has always inspired, shown way, to address many issues like environment and climate in its own way. It is time we temper our human intellect and listen to nature

Bio-mimicry is applied science which studies nature's model and takes inspiration from its design and process to solve human problem. My research paper aim at the study of biomimetics approaches to formulate strategies for sustainable development with the help of different case studies.

This is an attempt to bring to the notice of designers, architects, engineers this new way of designing with biomimetics. It is an attempt to inspire and change their perception of nature, re-start the process of going back to the root concept.

**Introduction to Biomimicry:** The word *Biomimicry* derived from Greek words *Bios: life*, *Mimesis: imitation*. It is a new discipline that studies nature's best ideas and then imitates

Published 2019: PP: 321-328  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

## Importance of Eco-friendly Material in Construction

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### ABSTRACT

The term Eco-friendly material means the material which is not harmful to the environment. Modern fast economic growth of industrialization and urbanization creates huge problems to the environment and human health. Production of building materials leads to irreversible impact on environment. Hence, there is need to reduce this impact by the use of eco-friendly material in construction. There are many different materials that can be used that are eco-friendly from the foundation to insulation, to interior and exterior wall finishes, flooring and countertop materials. This material causes minimum damage to the environment right from the manufacturing to final product and requires minimum energy during manufacturing. It can be extracted from the nature very easily. The best way to build a eco-friendly building is by using eco-friendly materials. Eco-friendly materials normally used in construction are Bamboo, Reclaimed lumber, recycled metal, dimension stone, sheep's wool, precast cement, sun dried bricks, clay roofing tiles etc. Eco-friendly materials are long-term cost savings, environmental protection and infrastructure preserving.

**KEYWORDS** Environmental material, economic growth, etc.

### INTRODUCTION

Eco-friendly means environment friendly or not harmful to the environment. More people and sectors of the economy are paying attention to the environmental impact while making daily living and business decisions. Eco-friendly construction involves the use of materials and processes that are resource-efficient and environmentally throughout the life cycle of a building. An eco-friendly material in construction is one that increases the efficiency of energy used and reduces impact on human well-being and the environment. These materials must be used in such a manner that a building's maintenance and costs are reduced. These

Published 2019: PP: 241-250  
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## Comparative Study on Sustainable Fashion and Garment Industry

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### ABSTRACT

Textile and fashion products are manufactured, distributed, sold and used worldwide, so the textile and fashion industry have a major impact on the environment. Environmental issues are playing an increasingly important role.

Sustainability is a systemic concept, relating to the continuity of economic, social, institutional and environmental aspects of human society.

Upcycling is essentially the "Reuse" in "Reduce, Reuse, and Recycle." The textile and fashion industries consume huge quantities of resources, such as water and energy, use toxic chemicals, rely heavily on transportation which uses additional resources, produces a large amount of waste, and are implicated in human rights violations in developing countries. Upcycling is designed to work in opposition to consumer culture, encouraging people to think of new and innovative ways to use things, instead of simply buying new consumer goods. In this paper researcher have tried to find out the way for Upcycling of wastage from the apparel industry.

**KEYWORDS** Sustainability, Eco fashion, Upcycling , Garment waste

### INTRODUCTION

#### Concept of Sustainability

Environmental issues are playing an increasingly important role in the textile industry, both from the point of view of government regulation and consumer expectations. Almost every where in the world and in all industries , the sustainability movement has been manifested. In this context, it has to be mentioned that the textile industry is one of the biggest polluters . Sustainable textile has grown in popularity because of the moral consciousness that many



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Published 2019; PP: 251-255  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

2018-19

## Sustainability of Indian Handicraft Industry in World Market

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### ABSTRACT

The Indian handicraft industry forms a major part of rich cultural heritage of country. It is an unorganized, decentralized, labour intensive cottage industry. Some of the strengths identified are availability of abundant & cheap labour in the country, use of local resources, low capital investment and unique craftsmanship in manufacturing of products along with increasing appreciation by international consumers. Despite the strengths, the industry faces a number of problems in the country such as low literacy and education levels, lack of modern / technological skills & lack of adequate finance. The planning commission acknowledges the fact that the unorganized sector that constitutes about 93% of the workforce doesn't have a structured system to support acquiring or upgrading of skills. The 12th Five Year Plan's vision for the handicraft sector includes creation of globally competitive handicrafts and provision of sustainable livelihood opportunities to the artisans through innovative product designs, better product quality & use of technology while preserving traditional art. Various schemes have been designed and efforts have been taken to achieve this vision. How effective are these efforts, remains questionable. This case, through a secondary literary study presents the current situation of the handicraft sector and the artisans alike in order to facilitate analysis of problems and identification of developmental pathways.

**KEY WORDS:** Handicraft, sustainable, designs, traditional, artisans, art

### INTRODUCTION

Handicrafts are mostly defined as "Items made by hand, often with the use of simple tools, and are generally artistic and/or traditional in nature. They are also objects of utility and objects of decoration." The uniqueness of Indian handicraft lies in grace, rich variety, and

  
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2019-19

## Banana Fabric - An Alternative to Eco-Friendly Fabrics

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### ABSTRACT

After the industrial revolution and the fashion industry leads towards a future where synthetic fabric have been developed to increase the production to fulfill the needs in the textile industry. But it is highly affecting on the environment, especially water and soil pollution. While producing the synthetic fabric it releases chemicals which are very harmful to the water and soil resources. It is also polluted the air because of its fame. Because of all the pollutions the textile industry promotes the natural fiber which remains sustainable alternative fibers and fabrics. Other fibers such as cotton, silk, jute, hemp, linen, rayon, including the manmade fibers using petroleum to increase the fiber properties and these fibers are increasingly popular. Banana is one of the plants currently grown all around the world. It is a global fruit crop that serves needs including fruit as food, leaves as wrapping and stem for fiber and paper pulp. In banana plantation after the fruits are harvested, the stem will be wasted. More than a billion tons of banana tree stems are thrown away each year. These fibers were extracted from the banana stem. These fibers can provide a large variety of uses in textile as well as fashion industry. The focus is on banana fiber because it is 100% bio degradable. As India is one of the largest bananas producing country. The use of its fibers and its wastes for producing innovative and useful products would be attractive for the economy. So the increase in the production of banana fabric will increase the scope and better future to the textile industry. As it is the natural resource the future of the environment will less affected. So the awareness for the environment issues through the use of eco-friendly material that is available easily is very helpful to develop the textile industry.

**KEY WORDS**-Eco friendly fibers, banana fiber, bio degradable, recycle.



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Published 2019: PP: 260-270  
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 ISBN: 978-93-5351-464-8

## Strategies in Sustainable Fashion

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### INTRODUCTION

Textiles/Garment is one of the essentials commodities for a mankind. Garment industry transformed from mere protecting a body to daily changing fashion as per need. Industrial revolution brought new inventions which are having thrust on higher production. Customer became the king and consumerism became buzzword in industry. Developed and developing countries are having high perishable income to spend. Companies are producing more and consumers are using more. The cost of goods is fallen down further due to economies of scale. Companies framed their marketing strategies suitable for higher consumption. Consumer generate a throw away approach due to cheaper cost which increase further consumption. Different brands like ZARA cater the need of market by adopting fast fashion strategies which is followed by others. This increases a lot of waste which became environmental hazard. The garments are landfilled for disposal. The man made/synthetic garments are not bio degradable and further pose a threat to environment. Different textile chemicals increased this threat further. The Different scientists worked on alternate strategies of waste disposal, reducing the consumption of garments, prolonging the life of a garment, recycling of garments etc.

Textile & Garment industry is the second largest industry in terms of the use of water after agriculture. Water consumption for textiles throughout the world is approximately 79 billioncubic mtrs .annually. It has been estimated that in the UK alone around 350,000 tons of clothing ends up as landfill every year. 25% of the world's pesticides are used to grow non-organic cotton. Some of the clothing remains unsold and the sale becomes the permanent phenomenon in fashion industry. The defective garments and their parts are directly going to



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Published 2019: PP: 271-276  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

2018-2019

## Quality by Design in Apparel Industry

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### ABSTRACT

In an attempt to keep the price low and importance given to technological aspects by garment /apparel industry, knowingly-unknowingly results in negligence towards designers, manufacturers, sellers and consumers in whole process. Quality by Design (QbD) is a concept wherein previous experience, knowledge and expertise was used and the entire process is designed in such a way to achieve the goal of quality product the satisfy consumer needs and increase customer compliance. Four major components of QbD(Defining product design goal, Discovering process design space, Understanding Control space, and Targeting operating space) are to be addressed systematically, to reach the goal. There are various factors on which quality fitness of apparel industry is based such as - performance, reliability, durability, visual and perceived quality of the garment. Establishing quality requirements, setting quality objectives of industry, and proper understanding of product, process and QbD assure good business, no batch failures in production, no deviations from designed protocols, cost effective, developmental decisions and empowerment of personnel involved in the process. It can be concluded that implementation of QbD concept may lead to improvement in quality output of designed products resulting in enhanced market acceptance and increased profit. Also, an improved competitiveness of firms with developed work procedures are the outcomes of QbD.

**KEY WORDS** QbD, garment, apparel industry, designers

### INTRODUCTION

Until now, textile and apparel/garment industry has emphasized on technological and cost issues of the product. Always, focus was to keep price of manufactured garment low with



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Published 2019: PP: 165-171  
Copyright © Dr. A. R. Kulkarni  
ISBN: 978-93-5351-464-8

## Incorporation of Flax Seed Flour and Soy Flour in Traditional Khakra

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### ABSTRACT

Khakra is Indian customary item prominent in India It is favorite ethnic food of vegetarian Gujrati people. It is eaten as snack food. It is like readymade roasted papad and is made from whole wheat flour ,oil and spices. The present study was carried out to increase the nutritive value of khakra by mixing the whole wheat flour with flax seed flour and soy flour. Different combinations of flour were tried for the preparation of khakra. The final test sample was set up with 40, 12.5 and 12.5 percent of whole wheat flour, flax seed flour and soy flour respectively. The test sample was compared with control sample by sensory evaluation and proximate analysis The test sample was found to be acceptable and proximate analysis of test sample showed 12.78 % protein,15.36 % fat ,59.67 % carbohydrate and 9.99 % moisture whereas the proximate analysis of control sample showed 9.07 % protein, 12.57 % fat, 61.13 % carbohydrate and 9.91 % moisture. Thus test sample was found to be protein rich along with the health benefits of flax seeds which is rich in phytochemicals protecting the body against cancer, diabetes, heart diseases and lowering cholesterol levels.

**KEY WORDS** flax seed flour, sensory evaluation, proximate analysis, phytochemical

### INTRODUCTION

Khakarais one of the popular vegetarian roasted thin cracker bread or snack from the Gujarati cuisine. Khakara is simple to prepare and is made from whole wheat flour adding other ingredients and spices and eaten with chutney, pickles, ghee or yoghurt. The Khakara is



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Published 2019: PP: 172-180  
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 ISBN: 978-93-5351-464-8

## Studies on Development and Evaluation of Vegan Kheer Mix

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### ABSTRACT

Present study was investigated to develop and standardize the vegan kheer mix made up of malt blend using combination of non-dairy milks. The study included evaluation of organoleptic characteristics and shelf-life of the developed vegan kheer mix. The technology included for preparing vegan kheer mix was using freeze drying method. Freeze drying process was aimed to minimize the drying time by traditional drying and increasing shelf-life and ultimately the quality of product. The vegan kheer is developed using blend of malts of Cow pea (*Vigna unguiculata*), Green gram (*Vigna radiate*) and Lentil (*Lens culinaris*) and non-dairy milks of soyabean (*Glycine max*) and Almond (*Prunus dulcis*). Malt blend was prepared using standardized procedure. The prepared malt was formulated with different concentrations of non-dairy milks. The selected sample contained base ingredients as Soy milk: Almond milk (1:2) and malt blend (1:1:1), sugar 20 gm, dry fruits and flavouring agent. The optimum concentration of malt kheer ingredients were determined by conducting preliminary trials using 9 point Hedonic scale rating test. Samples of kheer were studied for sensory properties viz. color, flavor, texture, appearance and overall acceptability. Proximate analysis revealed that the vegan kheer mix provides 151.51 Kcal energy, 3.62 gm protein, 28.52 gm carbohydrate, 2.55 gm fat and 61.44 mg calcium. The shelf-life study of vegan kheer mix revealed that it could be stored for 12 months. The study also revealed that the product is preservative free. It is a rich source of energy, fat and calcium. It can be preferred by all age groups and can be used as a Weaning food.

**KEY-WORDS** Kheer, Freeze-drying, Malt, Non-dairy, Vegan

# 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 Scopopacidae were found to be the highest composition (11 %) followed by Anitidae, Charadriidae, Jacanidae, Laridae, Ciconidae 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 canella*, *Garra* sp., *Parachanna obscura*, *Hyporhamphus varthopterus*, *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

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

Manohara G., A. R. Kulkarni

Received 13 January 2019; Accepted 20 February 2019; Published on 17 March 2019

**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, Pointed 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 worlds 10,000 bird species are long distance migrants (Sekercioglu 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. Kuttan and Franco (2004) opined that monitoring of wetland birds provides valuable information on the ecological health and status of wetlands and can be a vial 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 abundancy 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- Oncourses 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- Oncourses 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- Oncourses 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.

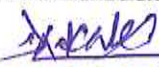
As per All India Survey on Higher Education (AISHE) 2017-18, the Gross Enrolment Ratio (GER) in higher education has increased from 24.5% in 2015-16 to 25.8% in 2017-18. Tamil Nadu has highest GER in India at 46.9%. Even if India succeeds in its target of 30% GER by 2020, 100 million qualified students 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

  
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## WATER QUALITY INDICES FOR PANCHAGANGA RIVER BASIN

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(Received 8 January, 2020; accepted 10 March, 2020)

### 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](http://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. Panchaganag 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 (Elico CM 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 titrometric method and TDS by

  
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# PHYSICO-CHEMICAL CHARACTERISTICS OF SOIL OF PANCHANGANGA RIVER BASIN

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(Received 27 January, 2020; accepted 5 March, 2020)

## 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 saline
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. Bhumba (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 ( $pH_1 < 7.5$  or  $pH_2 < 8.0$ ), saline ( $pH_1 7.5$  to  $8.5$  or  $pH_2 8.0$  to  $9.0$ ) and alkali ( $pH_1 8.2$  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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Received 20 January, 2020 accepted 1 March, 2020

### 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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(Received 5 April, 2020; accepted 17 May, 2020)

## 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 tauka. 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  $400\text{ cm}^{-1}$ ) 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  $960\text{ cm}^{-1}$  can be attributed to R – OH bending vibrations. Strong vibrations in the region below  $550\text{ cm}^{-1}$  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



  
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Studies On Malt Instant Dhokala 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 (T<sub>2</sub>) 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 Table I. All the ingredients were weighed accordingly, mixed, labeled and packaged.

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

Ingredients (gm)	Formulations				
	T <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>
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 T<sub>3</sub> 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 T<sub>3</sub> was very similar as compared to other samples. Results of sensory evaluation are similar to that of reported by [11].

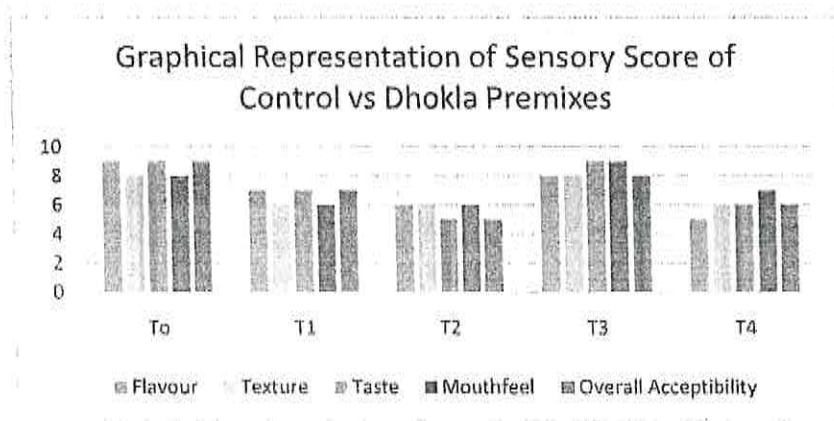
### 3.2 Chemical Analysis

In the present study, four different Dhokla samples (T<sub>1</sub> – T<sub>4</sub>) 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 <sub>0</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>
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 ie. 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 KarkaSankrantii.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 GudiPadwa.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 jaggerypresent in Gajakincreases the rate of metabolism and keps the body warm during winter.

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

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

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**Republic Day:**

On 26<sup>th</sup> 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 Governmentoffices. 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 governmentsofficers, 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.

KesarHalwa 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 thaiPongal. 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 andrice 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,anti-oxidants and dietary fibre.It is good for cough and cold,ginger in it fights with infection and boosts digestion,controls nausea.

**Makarsankranti:**

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 PeddaPanduga 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 "ElluBirodhu." 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'. OnBhogii.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, insolublefibre 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, vitamink,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 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.

Srikhand is rich in riboflavin, folic acid, vitamin B<sub>12</sub>, 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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**Ms. S. M. Dhavan**  
Assistant Professor  
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CSIBER  
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Maharashtra

Madam: Subject: Acceptance Letter


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 7<sup>th</sup> 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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## SOCIOECOMIC STATUS AND OBSTETRIC HISTORY OF POST-MENOPAUSAL WOMEN IN KOLHAPUR CITY OF MAHARASHTRA

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### 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  $54.51 \pm 4.90$ . 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  $44.24 \pm 5.71$ .

### 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

  
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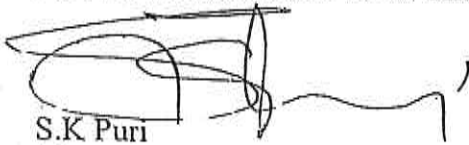
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**ASSESSMENT OF NUTRITIONAL STATUS  
OF POSTMENOPAUSAL WOMEN WITH  
SPECIAL REFERENCE TO ANTHROPOMETRIC  
MEASUREMENTS AND DIETARY PATTERN**

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*International Journal of Family and Home Science, Vol.14 (3) (Sep.-Dec., 2018) (417-425)*

**Abstract**

*Objective: To assess anthropometric and dietary assessment of post-menopausal women in Kolhapur city of Maharashtra. Methods: purposive sampling method. Setting: 300 post-menopausal women between the age group of 50-59 yrs. were selected from Kolhapur city of Maharashtra. Tool: Self-structured questionnaire comprising body measurements, body composition and 24 hrs dietary recall was devised. Result: The mean age of the participants was  $54.51 \pm 4.90$ . Mean weight (kg), body mass index (kg/m<sup>2</sup>) and mean WHR of study population was  $63.97 \pm 13.01$ ,  $27.64 \pm 4.43$  and  $0.90 \pm 0.15$ , respectively. Body composition of selected post-menopausal women shows that mean total body fat (%) was  $41.52 \pm 9.27$  and mean visceral fat was  $8.67 \pm 2.3$ . The mean energy, protein, vitamin B<sub>1</sub>, B<sub>2</sub>, B<sub>3</sub>, vitamin C,  $\beta$  carotene, iron, calcium, zinc and dietary fibre intake were recorded below RDA. Among food groups, mean cereal, pulses, leafy vegetables, other vegetables, roots and tubers, fruits, milk and milk products, meat/fish/ poultry consumption were recorded below the balanced diet. Only mean fat and sugar and jaggery consumption were above the balanced diet. Conclusion: Anthropometric measurements shows that selected post-menopausal women were obese; in spite nutrient intake was below RDA and food consumption was below balanced diet.*

**Key words:** Post-Menopausal Women, Anthropometric Measurements, Dietary Assessment, Body Composition.

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## CLIMATE SENSITIVE BUILDING FORMS

AR. RUTIKA TENDULKAR

**Abstract:** We shape our buildings; thereafter they shape us - (Winston Churchill). Infinite varieties of forms can mould a building. Suitability of specific forms with respect to their respective climates, and their response to environment shall be analyzed. The building itself is the third basic factor that influences the heating and cooling requirements. These depend on its shape, form and construction as it is directly exposed to outdoor environment & hence responsible for solar heat gain or loss through the building envelope. Dealing with various building forms with respect to climate (Thermal Environment) will help in analyzing the advantages and disadvantages of various forms in that specific climate.

**Keywords:** Building Orientation, Building Shapes and Forms, Thermal Environment, Solar Access, Surface Area to Volume Ratio.

\*\*\*

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## "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 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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## 14. Facades for Commercial Buildings

Dr. Bela Joshi  
Dr. Amritya N. Mestry

### Abstract

Facade is generally exterior side of building. The major purpose of facade is to separate indoor environment from outdoor. Highly performance facades have a prominent role in achieving resource efficient buildings and they also are responsible for indoor climate and affect the human satisfaction and productivity. Facade system comprise the structural elements that provide lateral and vertical resistance to wind and other actions and building envelope that provides whether resistance, thermal, acoustics and fire resisting properties. The design of building facades is now much more complicated due to stress on energy efficiency and development of new methods of construction. The cost factor and maintenance of materials have to be considered while developing new techniques in facade development of commercial buildings.

**Keywords**—Facade, Solar orientation, thermal insulation, acoustical control

### Introduction

In architecture, the facade of building is often the most important aspect from design standpoint, as it sets the tone for rest of the building. From engineering perspective of a building facade is also of great importance due to its impact on energy efficiency. The design process of facade follows an activity where large number of stakeholders are involved. The building facade also provides the owner and architect with a canvas on which to create image representing the owners business, ideals or outlook.

A facade should be designed considering local climatic conditions, solar orientation, prevailing wind direction, view opportunity, Safety considerations, acoustics, nature of occupancy and so on. It is rational to have low wall to window ratio, as day light will penetrate deep into building's internal space and there will be sunlight accessibility into cold winter months. Sun shading devices keep direct sunlight from shining on glazing surfaces, enhance the glazing co-efficiency of facades and result in less thermal transmission through facade system. It should also be considered that air tight construction has recently been criticized as a contributing factor to poor indoor air quality and sick building syndrome. In order to avoid this, it is best to provide operable window / glazed panels as a part of air tight facade system. Self-cleaning facade solution titanium dioxide (TiO<sub>2</sub>) can be applied to the glazing system and walls. When it

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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 harvesting 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 to rainfall for growing crops (Cantor, 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 efficiencies & 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. Barry 2016). Devedis S. (2013) concluded that, the novel approach to design irrigation system is the use of plant water stress analysis. While Hinder (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. Choudhan (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. Gattawat and Dinesh V. 2015).

To make irrigation system simpler, the complexities involved in irrigation are tackled with automation system said by R. Subhataksini in 2015.

## 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 collect 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 per-stage.

### 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 (36%), Groundnut (4%), Pongrogram (54%), Red gram (2%), Safflower (2%), Wheat (4%), Ridge guard (2%) where as in Kolhapur they farmer 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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### 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, Fertilizer, Agricultural practices, Pesticide, 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 manures 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 pesticide offer particular promise, of which strains of *Bacillus thuringiensis* is an example.

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

In the view of Jan 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

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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, Epithea, 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 Trichoptera (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.

  
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# 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 Kenno, 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. (1999) 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 summaries 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