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## 1. Molecular Studies of in-vitro Propagated Three Mentha species on “KFA+”Media.

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International Journal of Applied Agricultural Research  
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### Molecular Studies of in-vitro Propagated Three *Mentha species* on “KFA+”Media

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#### Abstract

*Mentha arvensis*, *M. citrata* and *M. spicata* were propagated *in vitro* on KFA+ and MS medium and assessed for genetic homogeneity using ITS and *Cox2* RFLP. ITS and *Cox2* gene amplification gave amplicons of 680bp and 320bp respectively of MS and KFA+ propagated plants. The amplicons when digested with *HinfI* and *MspI*, of MS and KFA+ propagated plants were found to be homogenous. From these results it can be inferred that KFA propagated *M. spicata*, *M. arvensis* and *M. citrata* exhibited no variation at gene level, thereby maintaining genetic homogeneity and the true to type nature of the *in vitro* cultured plants as compared to plants propagated in Murashige and Skoog (MS) Medium. To reduce the cost, MS medium can be substituted by the fly ash based KFA+ as a plant tissue culture medium.

**Keywords:** KFA+, Murashige and Skoog (MS) Media, PCR, ITS, RFLP.

#### INTRODUCTION

Menthos or mints are exclusively cultivated for their oils and terpenoid contents. Spearmint (*Mentha spicata*) oil benefits all respiratory problems, is refreshing to muscles, nervous and glandular systems. *M. citrata* has diaphoretic and vasodilator properties. The juice of leaves of *M. arvensis* is an effective gargle in ailments of oral cavity. It is also used as an expectorant, uterine tonic, in the diseases of liver and

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## 2. Antimicrobial Studies of in-vitro Propagated Three Mentha Species on Novel Media.

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### Antimicrobial Studies of in-vitro Propagated Three *Mentha* Species on Novel Media

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#### Abstract

Three species of *Mentha* were propagated on MS medium and novel KFA medium for assessing comparative antimicrobial activity against some of the common pathogens. KFA propagated *M. spicata*, *M. arvensis* and *M. citrata* showed significant antimicrobial activity against *Escherichia coli* and *Candida albicans* as compared to plants propagated in MS medium. 70% ethanolic leaf extract of KFA propagated *M. citrata* showed highest zone of inhibition and *M. spicata* showed lowest zone of inhibition against *Escherichia coli*. Leaf extracts [70% ethanol: methanol: chloroform (4:3:3)] of KFA propagated *M. arvensis* showed maximum zone of inhibition against *C. albicans*. Minimum zone of inhibition was shown by MS propagated *M. citrata* and KFA propagated *M. arvensis*.

**Keywords:** KFA, MS, antimicrobial, *Mentha* species, *Escherichia coli*, *Candida albicans*.

#### INTRODUCTION:

About 25% of total medicines used are derived directly or indirectly from plants. Herbs with medicinal properties are in high demand as a source for alternate medicine among people in both developed and developing countries. This ever increasing demand for herbal medicines, poses further increase in demand for higher production of these plants. Medicinal plants represent a rich source of antimicrobial agents. Antimicrobial activity of plants is mostly due to the presence of phytochemicals like phenols, flavones, flavonoids, tannins, coumarins, essential oils, alkaloids etc. which can be extracted from various plant parts using different solvents. However, the

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### 3. PCR-RFLP of *Calotropis gigantea* (L)-A Tool for Forensic Application.

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#### PCR-RFLP of *Calotropis gigantea* (L)- A Tool for Forensic Application

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##### Abstract

Plants besides having immense economic and medicinal value are also known to have poisonous products which are found in leaves, stem, bark, seeds, fruits, roots, flower, latex and gum exudates of such plants. These are used for cattle poisoning and sometimes as homicidal and suicidal agents. The major challenge for the forensic scientists lies in identification of the source of poisoning. In the medico-legal plant poisoning cases, identification of plants are based on exomorphological characters and on the basis of phytochemical and biochemical markers viz. secondary metabolites. However, the morphological characters changes with change in the environment, hence less reliable whereas secondary metabolites, may not be present in all the plant parts and thus cannot be used as authentic markers. Most effective approach to identify the source of plant poisoning is by using DNA markers, occurs naturally in all plants, does not change during life time for solving complicated criminal cases. The present study was undertaken to develop DNA markers using PCR-RFLP of *Calotropis gigantea*, a common roadside plant a potent poison. Internal Transcribed Spacer (ITS) region of the rRNA gene was PCR amplified and an amplicon of 770bp was obtained from four plant samples collected from different geographical regions. The amplified gene was subjected to restriction digestion with *HinfI*, *MspI*, *MboI*, *EcoRV*, *AluI*, *BamHI*, *EcoRI* enzymes. The generated DNA fragments in the size of 300,170,150,100 and 50 bp by *HinfI*; 380,190,150,50 bp by *MspI*; 720 & 50 bp in *MboI* and 450 & 320 bp in *EcoRV* can be applied for identification of *Calotropis gigantea* in forensic investigation in plant poisoning cases.

**Keywords:** *Calotropis*, Poisonous Plant, PCR-RFLP, Forensic

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#### 4. In-vitro Clonal Propagation of an Indian Medicinal Plant- *Justicia procumbens*.

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### In-vitro Clonal Propagation of an Indian Medicinal Plant- *Justicia procumbens*

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#### Abstract

In vitro cultures of an Indian native medicinal plant *Justicia procumbens* was established on MS and low cost KFAplus medium for its clonal propagation and assess the efficiency of the two media pertaining to the growth and multiplication. High percentage of shooting was observed in MS medium supplemented with IBA (0.5mg/L) and FAP (1.0mg/L) in about 21 days and in KFA plus medium in about 20 days. Healthy and long roots were obtained using both the media. Hardening of the tissue cultured plants were carried out in soil under artificial conditions and 100% survivability was recorded. This was the first report of rapid multiplication of *Justicia procumbens* in *in-vitro* condition using MS and Low cost KFAplus medium.

**Keywords:** Medicinal plant, *Justicia*, KFAplus, in vitro, Clonal propagation

#### INTRODUCTION

Since ancient times, mankind has been dependent on plants for food, feed, flavours, medicine and many other uses. Ancient written records of many civilizations including India, give strong evidence regarding use of medicinal plant. In majority of the developing countries, people of rural areas use folk medicine made from plants and plant parts for the treatment of various diseases and ailments. The World Health Organisation (WHO) reported that 80% of people in the developing world use medicinal plants for their primary health care. At present there are many well established herbal and plant medicine practices which are popular in many parts of the world as complementary and alternative medicine (CAM) therapy<sup>1</sup>. Many plant based remedies are back in use and find increasing applications as source of direct

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## 5. Effects of Various Growth Regulators on Callus Induction of *Justicia* sps. and its Co-relation with Total Phenolic and Carbohydrate Content

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### Effects of Various Growth Regulators on Callus Induction of *Justicia* sps. and its Co-relation with Total Phenolic and Carbohydrate Content

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#### Abstract

*Justicia* sps. is known for their immense medicinal property and pharmaceutical applications. Callus was induced using leaves as explant derived from pre-established axenic culture of *Justicia* grown in MS medium supplemented with IBA (0.5 mg/l) + Kn (1.0 mg/l). Effect of various PGRs on callus induction and biomass generation as well as on production of total phenolic content was investigated. Best growth and maximum biomass of callus was obtained in medium supplemented with BAP (2.0mg/l). The present study revealed that medium supplemented with BAP (1.5mg/l) and BAP (2.0mg/l) produced high amount of phenols with more carbohydrate content. It is also inferred that MS medium supplemented with cytokinins like BAP can enhance secondary metabolite production. The enhanced phenol and carbohydrate content may be co-related with the fact that polyphenols increases with increase in carbohydrate content as the excess of carbohydrate is diverted to the secondary metabolite pathways producing more phenols.

**Keywords:** Callus, *In-vitro*, *Justicia*, PGR, Phenolic content, Carbohydrate content.

#### INTRODUCTION

*Justicia* is the largest genus of Acanthaceae, constituting 600 species, found in pantropical as well as tropical southern regions of India<sup>1</sup>. It is a shrub and widely used in the Indian system of medicine for respiratory and gastrointestinal diseases, inflammation, rheumatism, arthritis, hallucinogens, sedatives, epilepsy, mental disorders, headache, fever, cancer, diabetes, HIV<sup>2</sup>, expectorant, antispasmodic and good blood purifier and also used for speeds up the child birth. People mostly use extracts from leaves followed by the roots<sup>2</sup>. Various polyphenolic compounds like

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## 6. Micropropagation of *Lilium Asiatic* in an Efficient Low Cost Novel Medium “KFA and KFA plus.

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### Micropropagation of *Lilium Asiatic* in an Efficient Low Cost Novel Medium “KFA and KFA plus”

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#### Abstract

Low cost technology for Plant Tissue Culture is promoted worldwide especially for the production of flowering or ornamentals crops like *Lilium asiatic*. As tissue culture media plays an important factor in deciding the cost of *in vitro* plants a continuous quest to find the substitutes of media components is in process. In an attempt to lower the cost of the *in vitro* micropropagated plants of different varieties of exotic *Lilium asiatic*, we developed an efficient low cost medium “KFA and KFA plus” (Flyash” as the main source of inorganic constituent; Patented), which could replace the widely used expensive Murashige and Skoog’s medium. The comparison was done on four major criteria: % bud break, % shooting, % rooting and cost. When cultured on KFA and KFA plus, 70% bulblet formation was observed in KFA and 86.6% bulblet formation in KFA plus as compared to 83.3% in MS medium supplemented with IAA (0.8mg/l) + BAP (1.5mg/l). Healthy response and an average of 1.6 bulblets/explant were obtained. Healthy rooting in 70% bulblets cultured on KFA plus medium supplemented with same concentration of PGR was observed as compared to 50% rooting in MS medium. Cost of media was reduced 10 times by using KFA plus as culture media as compared to MS ready media (Hi media, India) and very encouraging results in relation to growth and multiplication was obtained. Therefore, use of flyash media resolves our main aim to produce low cost plants as well as the reduction of disposal problem of thermal power plant waste, leading to phytoremediation.

**Keywords:** Novel medium, flyash, Plant tissue culture, *Lilium asiatic*, KFA and KFA plus, micropropagation, phytoremediation.

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## 7. Physical Activity and Life Style Pattern Amongst Working Women. International Journal of Recent Scientific Research Research

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**Research Article**

### PHYSICAL ACTIVITY AND LIFE STYLE PATTERN AMONGST WORKING WOMEN

**Ritu Pradhan\* and Eshita Bhattacharya**  
Government Home Science College Chandigarh  
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**Key Words:**  
Physical activity, Healthy life style, Life style factors, IPAQ, Working women.

**ABSTRACT**

**Introduction:** The present study entitled "physical activity and life style pattern amongst working women" was prospectively undertaken to assess both these parameters in backdrop of changing life style and roles and responsibilities of educated working women. **Methodology:** The study was conducted on 250 working women, selected from both government and private sector organizational firms from tricity i.e. Chandigarh, Mohali and Panchkula. A self-designed questionnaire that included demographic information and lifestyle factors was developed and administered to elicit the required information. **Physical Activity** was assessed using globally accepted standardized International Physical Activity Questionnaire (IPAQ)(WHO). **Results:** 69.2% had sedentary level of physical activity. The percentage of moderate activity level was 30.8%. Out of 250 subjects, large number of the respondents were non-smokers. And only 15.6% subjects consumed alcohol. **Conclusion:** Due to changing roles w.r.t employment, education and economic independence a change in life style factors is inevitable. However, this change tends to be directed as positive deviation to develop healthy and efficient workforce. Education for producing lifestyle changes through individual initiative by a knowledgeable population is apt.

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**INTRODUCTION**

Physical activity plays an important role in improving and maintaining good health and preventing diseases. An increase in physical activity is one of the measures that would have the greatest positive impact on the health of a population. If everyone follows the recommendation of the being physically active on daily basis, the health of the population would improve considerably and health care cost on state health systems would drop dramatically. If the quality of human capital is not good, physical capital and natural resources cannot be properly utilized and growth neither be sustained nor be qualitative. Health is major segment of human capital in which physical activity and life style are major contributors. Presently, health maintenance and improvement is achieved through the advancement and application of health science, but also the efforts and intelligent lifestyle choices of the individual and society plays a synergistic effect. According to the World Health Organization, the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviours (WHO, 2011).

Studies have concluded working women both in private and government sector have many reasons for non-participating in physical activities which contributed to sedentary lifestyle.

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Working women's reported that certain events, pressures and situations impede their ability to become and remain physically active. Barriers to physical activity are diverse and include issues of skills/resources, psychosocial, support, personal wellbeing, time and condition factor (Radelyana Badawan et al. 2010). Women reported the need to increase activity levels in order to reduce their perceived levels of stress (Campbell R.L, Svenson L.W & Jarvis G.K, 1992).

It has been concluded that moderate-intensity physical activity instead of vigorous-intensity for at least 30 minutes most days of the week (generating energy expenditure of about 1000 kcal/week) decreases the risk of cardiovascular diseases and cognitive stress in women.

**Lifestyle risk factors**

The current burden of chronic diseases reflects the cumulative effects of unhealthy lifestyles such as smoking and consuming alcohol and the resulting risk factors over the life span of people. Chronic diseases, often referred to as non-communicable diseases (NCDs) including dyslipidemia and stress, usually emerge in middle age after long exposure to an unhealthy lifestyle involving tobacco use, a lack of regular physical activity, and consumption of diets rich in highly saturated fats, sugars, and salt, typified by "fast foods." This lifestyle results in higher levels of risk factors, such as



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## 8. Development and Sensory Evaluation of Granola Bars Fortified With Flaxseed

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**Research Article**

**DEVELOPMENT AND SENSORY EVALUATION OF GRANOLA BARS FORTIFIED WITH FLAXSEED**

**Ritu Pradhan\* and Khwaish Sethi**

Government Home Science College, Sector 10, Chandigarh

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**Key Words:**  
Flaxseed, Granola bar, Sensory characteristics, Flaxseed Fortified Products.

**ABSTRACT**

Flaxseed (*Linum Usitatissimum*) is a unique functional food having exceptional mix of essential polyunsaturated fatty acids, omega 3 alpha linolenic acid, omega 6 linoleic acid (LA), which promotes health benefits. The research work was carried out for development and sensory evaluation for acceptability of flaxseed in granola bar. Flaxseed was incorporated to the amount 20, 30 percent in standardised recipes and sensory evaluation was done with the help of 9 point hedonic scale in reference to appearance, taste, texture and flavor by pre trained panel of judges. Flaxseed incorporation enhanced the flavor and taste of standardised recipes. Granola bars fortified at both the levels 20% and 30% were acceptable. The mean score was 8-9 depicting great liking for the recipe. Products prepared with flaxseed not only taste great but also provide enormous health benefits as flaxseed has been shown to help reduce the risk of heart diseases, protect against cancer symptoms, reduce cholesterol and even ease the effects of type 2 diabetes. Due to enormous health benefits along with good taste recipes incorporated with flaxseeds are recommended to promote good health.

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**INTRODUCTION**

Flaxseed or linseed (*Linum Usitatissimum*) popular known as alsi, jawaab, Akoshyja in Indian language is a blue flowering rabi crop and a member of family linaceae (Anonymous, 2009). Ground flaxseed is particularly beneficial because the grinding process releases the nutrients that are not easily available from whole seeds. Flaxseed oil is low in saturated fatty acids (9%), moderate in monosaturated fatty acids (18%), and rich in polyunsaturated fatty acid (73%) (Cinnare et al. 1993).

The flaxseed contains approximately 40% lipids, 30% dietary fibre and 20% protein. The chemical composition varies considerably among varieties and also depends on the environmental conditions in which the plant is grown. Cofyledons contain 75% of the lipids, and 76% of protein is found in the seed. The endosperm contains only 23% of the lipids and 16% of protein (Daan et al., 2003; Oshra, 2003).

Flaxseed helps in lowering the risk of chronic diseases like heart disease, stroke, and cancer, as well as lower LDL, "bad" cholesterol. Omega-3 is an important component of almost all cell membranes these fatty acids are necessary and need to be balanced to maintain good health. (Edward, 2012). Flaxseed ingestion has been linked to reduce risk of cardiovascular disease (Carter 1993; Mantzouris et al 2000; Paschos et al. 2007) also there is a potential role for flaxseed in management of diabetes and hypercholesterolemia (Zhang et al 2007).

In functional foods arena, flaxseed has emerged as a new potential functional ingredient with a vast array of medical benefits. Flaxseed supplemented food products are gaining popularity because of its high content of polyunsaturated fatty acids, protein, soluble fiber and phytochemicals. Flaxseed is also being incorporated in the feed of animals to improve the nutritional quality of the meat and fat obtained from them.

**Objective**


Flaxseed being low on cost, high in nutritive value and having potential health benefits was used in the standard recipes for development and sensory evaluation and their acceptability of flaxseed in granola bar.

**MATERIAL AND METHODS**

**Selection of recipes:** Selection is based on high trends amongst people and their goodness.


**Material required:** The raw materials wheat, honey, oats, flaxseed, peanuts jaggery etc were obtained from local market.

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**Research Article**

**ORGANOLEPTIC ASSESSMENT AND NUTRITIVE VALUE EVALUATION OF  
COOKIE DEVELOPED USING FLAXSEEDS**

**Ritu Pradhan\* and Khwaisethi**

Government Home Science College, Sector 10, Chandigarh

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Value added products, Flaxseed, Cookie, Hsccat, Sensory characteristics, Nutritive Value

**ABSTRACT**

The present research work was carried out for development, standardization, organoleptic assessment and nutritive value evaluation of Cookie a value added product developed using functional food, flaxseeds. Whole flour and flaxseed powder blends were prepared in three samples with ratio of 50:0(C), 50:20(X1), 20:30(S2) respectively. Standardized procedures were followed for developing and standardizing recipes, organoleptic assessment (standardized 9 point hedonic scale by pre trained panel of judges) and nutritive value calculation (DietCalc-Verseus 5). Flaxseed incorporation did not modify the colour, flavor and taste of standard recipes but improved nutritive value of the recipes significantly for all major macro and micro nutrients. Recipes fortified at both the levels 20% and 30% were acceptable. Thus, value added products developed using functional food flaxseed are suggested as they taste good, provide preventive health benefits in decreasing cardiovascular diseases, diabetes, defense against various types of cancer and other chronic degenerative diseases.

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**INTRODUCTION**

Flaxseeds are scientifically known as *Linumcatenatum L* and in Latin *nutivatum* means 'most useful'. People from countries have been consuming flaxseed due to its good flavor and nutritional properties (Newkirk, 2008). Flaxseeds provides its health benefits due to the presence of  $\alpha$ -linolenic acid (ALA), the essential  $\omega$ -3 fatty acid, and phytochemicals such as lignans.

Flaxseed confers its health benefits on heart due to the presence of  $\alpha$ -linolenic acid (ALA) and  $\omega$ -3 fatty acid (Blonden & Seapary, 2004; Madhusudhan, 2009). Flaxseed ingestion has been linked to reduce risk of cardiovascular disease (Carter 1993); Mantzioris *et al.* 2000; Paschos *et al.* 2007) also there is a potential role for flaxseed in management of diabetes and hypercholesterolemia (Zhang *et al.* 2007).

Due to changes in dietary pattern and subsequently in disease pattern added with increased awareness about health issues more and more people are becoming health conscious and demanding the food having high nutritional value and at the same time conferring health benefits. In this regard, the demand for flaxseeds in food and beverages, functional foods and dietary supplements has risen dramatically (Newkirk, 2008). Flaxseed is considered to be a complete functional food

due to the presence of  $\alpha$ -linolenic acid (Boran & Temelli, 2008).

Cookie is a small cake made from stiff, sweet dough rolled and sliced or dropped by spoonfuls on a large, flat pan (cookie sheet).


*Objective*  
Flaxseeds being a inexpensive, highly nutritious functional food providing numerous health benefits was incorporated into cookies and their development, sensory evaluation and nutritional value assessment was conducted.

**MATERIAL AND METHODS**

*Selection of recipe:* Cookie was selected as it is popular food amongst all ages particularly youngsters and children due to ease of consumption, high energy value and goodness of taste.


*Standardization of flaxseed:* Roasting of flaxseed at different time i.e. 3min, 5min, 7min, at constant temperature was done on the skillet at slow flame to evaluate the most acceptable flaxseed sample to be incorporated into the identified and selected recipe viz cookies. After grinding the roasted flaxseeds, they were sieved twice through the mesh. Sensory evaluation concluded that flaxseed roasted for 5 minutes was

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## 10. Breast feeding practices in Chandigarh and Sri Ganganagar: A comparative study

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### Breast feeding practices in Chandigarh and Sri Ganganagar: A comparative study

September 2017

Authors:

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Educational Institute

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#### Abstract

Background: Optimum Breast feeding practices play a critical role in improving child survival and decreasing Malnutrition. Objective: To study and compare breast feeding practices in Chandigarh and Sri ganganagar. Methodology: A total of 500 mothers respondents having infants less than 2 years were included purposively for study, Chandigarh (n=269) and Sriganganagar (n=231). Data collection was done using a standardised questionnaire developed by WHO, UNICEF and USAID (2010) modified to suit the objectives of the present study. Questionnaire covered parameters like socio demographic profile, knowledge and practices followed for breastfeeding like colostrum feeding, exclusive breast feeding duration of breastfeeding, prelacteal feeds and initiation of breast feeding etc. Results: More than 93%, and 55%, reported having knowledge regarding colostrum and exclusive breast feeding respectively. 47.4% were initiated breast feeding within 1hour of delivery and 35.4% mothers reported giving prelacteal feeds within 72 hours of birth. Conclusion: Concentrated efforts for awareness generation need to be continued to maintain existing improvement and better for obtaining improved results. Adequate steps must be ensured for effective communication and implementation of IYCF guidelines at all levels particularly at grass root levels should be emphasized for desired behaviour change and effective outcome. Effective implementation of IYCF guidelines will go a long way in improving child survival and health status indicators in our country too.

## 11. Study on the nutritional status and eating pattern of adolescent school going boys of Chandigarh

Link: <http://www.foodsciencejournal.com/archives/2017/vol2/issue5/2-5-42>

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**A study on the nutritional status and eating pattern of adolescent school going boys of Chandigarh**

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**Abstract**

**Background:** Poor nutrition, unhealthy eating practices and decreased physical activity due to involvement and participation in screen time activities are major contributing factors for obesity.

**Objective:** To study the nutritional status and eating practices among 14-18 years' adolescent boys of Chandigarh.

**Methodology:** 500 adolescent school going boys belonging to 14-18 years were selected using random sampling technique and were assessed for Nutritional status, obesity (BMI) and eating pattern by using a pretested, self-designed, structured questionnaire developed considering the objectives of the study.

**Results:** Nearly one fourth (23 percent) subjects were overweight. Socioeconomic class and BMI of subjects was found to be significantly related (chi sq, p-value= 0.001) to Obesity and overweight status. Skipping breakfast (31.6%), snacking while watching television (40%) and eating in canteen (67.4%) were some of the unhealthy dietary habits. 70 % subjects devoted more than 1hr in sedentary leisure activity.

**Conclusion:** Large scale nationwide campaigns to spread messages on healthy nutrition and physical activity, targeted at specific groups are required for the prevention of obesity and to check the growing epidemic of obesity.

**Keywords:** obesity, eating pattern, socio economic status, leisure time activities, snacking, adolescent boys (14-18 years)

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**1. Introduction**

Adolescence has been defined by WHO as the period of life spanning between 10-19 years (WHO, 1995) [1]. It is estimated that about 30% population of India are adolescents (Nath and Garg, 2008) [2]. Adolescence is a period after infancy where growth rate is rapid and nutrient requirement increases due to increase in physical growth and development. Life style changes and nutrition transition affects the eating habits, physical activities and leisure time activities of adolescents. Physical activity has decreased and sedentary leisure time activities have increased. This has led to increase in the prevalence of obesity and overweight among children and adolescents.

Obesity is a major and rapidly growing global public health concern and is associated with significant morbidity and mortality. There is evidence that children and adolescents of affluent families are more overweight than in the past possibly because of decreased physical activities, sedentary lifestyles, altered eating patterns and increased fat content of the diet (Agras et al. 2004) [3].

Low levels of physical activity, watching television, and consuming junk food are associated with a higher prevalence of overweight. Children belonging to High schools/Senior Secondary classes are particularly vulnerable to external factors owing to newfound independence and the influence through peer pressure and exposure to media. This study is planned to determine the prevalence of obesity and eating pattern among adolescent boys (14-18 years) in Chandigarh as this age group is a growing phase.

**2. Materials and Methods**

The present cross sectional study was conducted in the Government and Private schools of Chandigarh. Schools having children in the age group of 14-18 years were selected using purposive random sampling technique (n=500). Before conducting the actual survey in the school the permission from the indexed school Principal was also taken. For the study purpose, children in the age group of 14-18 years were selected from 9<sup>th</sup> to 12<sup>th</sup> class randomly. A semi-structured pre-tested questionnaire was administered to each child to collect data on socio-demographic profile and dietary pattern. Socio-economic status was assessed using Kuppaswamy scale (Kumar et al, 2007) [4].

Anthropometric measurements of weight, standing height, were measured by utilizing standard methodology (Jelliffe 1989) [5]. BMI classification (WHO 2004) [6] was used for categorization of subjects in overweight and obese categories. Statistical analysis was done using SPSS (version 15.0) Frequencies, percentages, means and standard deviations were calculated. T test, Chi Square test were also used.

**3. Result and Discussion**

The present study was conducted on 500 adolescent boys. Majority of boys belonged to government schools (n=460) and rest of the boys belonged to private schools (n=40). Socioeconomic status as assessed using Kuppaswamy Scale (2007) found that nearly 85% of subjects were belonging to upper class and rest to lower middle.

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## 12. Development, Organoleptic and Nutritional Evaluation of Pearl Millet Based Mathri

Link: <http://recentscientific.com/development-organoleptic-and-nutritional-evaluation-pearl-millet-based-mathri>



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**Research Article**

**DEVELOPMENT, ORGANOLEPTIC AND NUTRITIONAL EVALUATION OF PEARL MILLET BASED MATHRI**

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Hedonic scale, Nutritive value, Proximate analysis, Significant

**ABSTRACT**

*Mathri* was prepared by substituting semolina with bajra flour. The different samples prepared were Type A, Type B, Type C, Type D and Type E in the ratios of (semolina:bajra flour) 100, 75:25, 50:50, 25:75, 100 respectively. *Mathri* was sensory evaluated using nine point hedonic scale. Results showed that *mathri* (Type B) was highly acceptable as scored (7.9±0.07) whereas *mathri* (Type E) was least acceptable as scored (7.1±0.09) on the other hand all types of *mathri* found under the category of 'liked moderately'. Most acceptable *mathri* (Type B) was further analysed for proximate and mineral content along with standard *mathri* (Type A). Result showed that *mathri* (Type B) has more protein (11.5±0.6 g), fat (18.9±0.1 g), fibre (1.4±0.3 g), moisture (15.9±0.5 %), ash (11.9±0.2 %), calcium (24.2±0.1 mg) and iron (3.3±0.4 mg) than standard (Type A). Thus replacement of traditional food like semolina with bajra flour for preparing *mathri* is feasible and beneficial too and also were very well accepted.

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**INTRODUCTION**

In the recent years there has been an increasing recognition of the importance of millets as the substitution for major cereal crops. Almost whole of the pearl millet produced in India is consumed in the form of various foods depending on the region and their food habits<sup>1</sup>. The percentage of crude protein, fat, crude fibre and ash content of pearl millet as reported in various analytical studies ranges from 7.02 to 13.67, 4.02 to 7.80, 0.54 to 3.00 and 0.25 to 2.54 per cent, respectively. Besides, the total quantity of protein, their amino acid composition is important for better nutritional quantity. The amino acids profile of pearl millet is better than that of sorghum and maize and is comparable to wheat, barley and rice<sup>2</sup>. The consumption of pearl millet is very poor inspite of being nutritional superior to other crops. The majority of people in India are economically poor and thus, food choices for a balanced diet are further restricted by poverty and insufficient supply of nutritious foods. Therefore, it becomes important to focus on promoting maximal use of locally available inexpensive foods rich in protein, calcium, iron, fibre etc<sup>3</sup>.

These days refined cereals such as semolina, refined flour are being preferred by most of the people in urban and rural areas.

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Usually the food products made of refined cereal is poor in nutritional quality especially in terms of minerals, vitamins and fibre content<sup>4</sup>.

Substitution with bajra flour is a cost-effective way to increase protein, fibre, iron and other nutrient<sup>5</sup>. Traditional preparation when modified like *mathri* with bajra flour could serve a means of enhancing nutritive value. Therefore, the present study was undertaken to know the effect of addition of bajra flour on sensory and nutritive value of *mathri*.

**MATERIALS AND METHODS**

**Procurement of pearl millet**  
Pearl millet was procured from Sector-15 Market, Chandigarh.

**Processing of pearl millet**  
The clean and healthy grain of pearl millet was used for preparation of flour. They were roasted in a pan and then ground with the help of electric grinder. Then the ground content was sieved through a mesh sieve to obtain flour. The powdered sample was stored in air tight container until further use for experiments (Fig.1).



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## 13. Sensory and nutritional evaluation of *biscuits* Prepared from pearl millet (*bajra*)

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**Sensory and nutritional evaluation of *biscuits* Prepared from pearl millet (*bajra*)**

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**Abstract**

The present study was undertaken with the objectives of evolving *biscuits* containing *bajra* to find out their acceptability and nutritive value. *Biscuits* were prepared by using whole wheat flour, *bajra* flour, sugar, ghee by substituting whole wheat flour with *bajra* flour. The different samples prepared were Type A, Type B, Type C, Type D and Type E in the ratios of (whole wheat flour:*bajra* flour) 100, 75:25, 50:50, 25:75, 100 respectively. The developed *biscuits* were sensory evaluated using nine point hedonic scale. Results showed that biscuit Type E was highly acceptable as scored (8.4±0.09) whereas biscuit Type B was least acceptable as scored (7.5±0.03). Highest energy, fat and iron were observed in Type E (1010 Kcal), (55 g) and (8 mg) respectively. Likewise fat, protein, carbohydrate, fibre and calcium were observed in Type B (68.3 g), (11.9 g), (118.5 g), (1.7 g) and (52.5 g) respectively. Biscuit (Type E) was most acceptable and analysed for proximate and mineral content along with standard biscuit (Type A). Result shows that biscuit prepared with *bajra* flour (Type E) was found to be high in carbohydrate (56.4 g), fat (23.2±0.1 g) and iron (9.4±0.2 mg) than standard biscuit (Type A). Thus replacement of traditional food like whole wheat flour with *bajra* flour for preparing *biscuits* is feasible and beneficial too and also were very well accepted.

**Keywords:** hedonic scale, pearl millet, nutritive value

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**Introduction**

*Biscuit* is most popular bakery product worldwide. It is an unleavened crisp, sweet pastry made from wheat flour, shortening & sugar, and is usually made light by the addition of baking powder. Because of its acceptability in all age group, longer shelf life, better taste and its position as snacks it is considered as a good product for nutritional improvement (Gayas *et al.*, 2012) <sup>[6]</sup>. Pearl millet (*bajra*) is an important coarse cereal crop in western India (Gujarat, Rajasthan and Haryana (Amarendra *et al.*, 2013) <sup>[1]</sup>. It has potential for future human use due to its tolerance to difficult growing conditions such as drought, low soil fertility and high temperature and can be grown in areas where other cereal crops, such as maize (*Zea mays*) or wheat (*Triticum aestivum*), would not survive. Pearl millet (*bajra*) contains substantial amount of minerals such as iron, calcium, zinc and high level of fat, it is nutritionally comparable and even superior to major cereals due to the energy and protein value (Fasasi 2009) <sup>[2]</sup>. Owing to lack of institutional support for millet crops in contrast to the institutional promotion of wheat, rice and maize continue to shrink the millet-growing region. While, pearl millet (*bajra*) is nutritious, it is underutilized in developed

countries due to non-availability in convenient/ ready to eat form (Obilana 2010). The objectives of this work were to prepare *biscuit* with different proportions of wheat flour and *bajra* flour, to characterize their nutritional value, and to evaluate the *biscuit* acceptance by panel member.

**Methodology**

**Procurement of pearl millet**  
Pearl millet was procured from Sector-15 Market, Chandigarh.

**Processing of pearl millet (*bajra*)**  
The clean and healthy grain of pearl millet (*bajra*) was used for preparation of flour. They were roasted in a pan and then ground with the help of electric grinder. Then the ground content was sieved through a mesh sieve to obtain flour. The powdered sample was stored in air tight container until further use for experiments.

**Standardization and development of *biscuits***  
Formulation was prepared by blending whole wheat flour and *bajra* flour in different proportions. Table 1 depicted different combinations of flour of whole wheat flour and *bajra* flour.

**Table 1: Proportion of *biscuits***

Sr. No.	Ingredients	Type A	Type B	Type C	Type D	Type E
1.	Whole wheat flour	100	75	50	25	-
2.	<i>Bajra</i> flour	-	25	50	75	100


**Preparation schedule for making *biscuits***


1. Sieve flour.
2. Add baking powder and ghee.
3. Mix well with fingers until the mixture becomes crumbled.
4. Add powdered sugar and mix it well.
5. Make smooth dough.


6. The rolled out dough should not be too thin or too thick. Using a lid or cookie cutter, cut desired shapes and makes striped design with a fork and then bake.
7. Place the biscuits on a greased tray and bake at 170 degree Celsius for 15-20 minutes or until the biscuits start browning slightly.


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## 14. Sensory evaluation of Ladoo prepared with pearl millet

Link: <https://www.homesciencejournal.com/archives/2017/vol3issue2/PartJ/3-2-97-736.pdf>

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### Sensory evaluation of Ladoo prepared with pearl millet

**Uttara Singh and Anubha Mehra**

**Abstract**  
 The objective of this study was to find out acceptability of ladoo containing five different combinations of Bengal gram flour and pearl millet flour viz., 100, 75:25, 50:50, 25:75, 100 ratio. Acceptance was assessed using a hedonic scale of nine points. It was noticed that incorporation of pearl millet flour above 50 percent was least acceptable in ladoo. At this level of incorporation of pearl millet flour, the appearance of the product was affected i.e. darker in colour and taste wise, bitterness was found by the panel where as 25 percent incorporation produced highest acceptability. Data revealed that the overall acceptability of biscuit ranged from 8.7 to 7.0. This indicated that the recipes were found to fall under the category of liked very much to like moderately. It can finally be discerned from the sensory scores for ladoo prepared with 25 percent incorporation of pearl millet flour that the ladoo were equally acceptable as that of control.

**Keywords:** Hedonic scale, Pearl millet, Nutritive value

**Introduction**  
 Pearl millet (*Pennisetum typhoidesum*), also classified as *P. glaucum*, *P. americanum*, or *spicatum*, and is locally known as *bajra* in India. It ranks third after wheat (*Triticum aestivum*) and rice (*Oryza sativa*) (GOI 2008)<sup>[1]</sup>. Pearl millet (*Pennisetum glaucum*), also known as *bajra*, is a cereal crop grown in tropical semi-arid regions of the world primarily in Africa and Asia. It is well adapted to production systems characterized by low rainfall (200-600 mm), low soil fertility, and high temperature, and thus can be grown in areas where other cereal crops, such as wheat or maize, would not survive. In its traditional growing areas, pearl millet is the basic staple for households in the poorest countries and among the poorest people. It is also one of the most drought resistant crops among cereals and millets. Pearl millet is generally used as a temporary summer pasture crop or in some areas as a food crop. (Sama, 2012)<sup>[2]</sup>. Pearl millet is one of the four most important cereals (rice, maize, sorghum and millets) grown in the tropics and is rich in iron and zinc, contains high amount of antioxidants and these nutrients along with the antioxidants may be beneficial for the overall health and wellbeing (Nambiar *et al.* 2013)<sup>[3]</sup>. In India, pearl millet is primary source of dietary energy (360 kcal/kg) for rural population in drier parts of the country and fourth most important cereal after rice, wheat and sorghum. It is a rich source of protein, calcium, phosphorous and iron. Pearl millet grain contains fairly high amount of thiamine, riboflavin and niacin. A significant portion of pearl millet grain is also used for non-food purpose such as poultry feed, cattle feed and alcohol extraction (Basavaraj *et al.* 2010)<sup>[4]</sup>. Pearl millet is used in making traditional foods, snacks such as porridge, chapatti, *khichri*, *laddoo*, *mathri*, baked products like cake, *nan khatai*, biscuits and extruded products like *sev* and sweet vermicelli, flakes and pops. It is also being used in various types of healthy food as it contains a higher proportion of insoluble dietary fibre which causes slow release of sugar, thus making the food products based on them especially suitable for those suffering from or prone to diabetes (Jaybhaye *et al.* 2009)<sup>[5]</sup>. The present study was undertaken to know the effect of addition of *bajra* flour on sensory attributes of *laddoo*.

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## 15. Quality Evaluation of Pearl Millet Incorporated Cupcakes

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**Research Article**

**QUALITY EVALUATION OF PEARL MILLET INCORPORATED CUPCAKES**

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ARTICLE INFO	ABSTRACT
<p><b>Article History:</b>                      Received 3<sup>rd</sup> March, 2017                      Received in revised form 25<sup>th</sup> April, 2017                      Accepted 24<sup>th</sup> May, 2017                      Published online 28<sup>th</sup> June, 2017</p> <p><b>Key words:</b>                      Hedonic scale, Pearl millet, Nutritive value.</p>	<p>The present study was undertaken with the objectives of evolving cupcakes containing <i>bajra</i> to find out their acceptability, nutritive value, proximate composition and mineral content of standard and most acceptable <i>bajra</i> cupcakes. Cupcakes were prepared by using refined flour, <i>bajra</i> flour, egg, sugar, ghee by substituting refined flour with <i>bajra</i> flour. The different sample prepared were Type A, Type B, Type C, Type D and Type E in the ratios of (Refined flour:<i>Bajra</i> flour) 100, 75:25, 50:50, 25:75, 100 respectively. The developed cupcakes were sensory evaluated using nine point hedonic scale. Highest energy, protein, carbohydrate, fibre, calcium and iron were observed in Type E i.e. (1183 Kcal), (24.9 g), (121.9 g), (1.2 g) (108 mg) and (10.1 mg) respectively. Fat content was observed in Type B (68.3 g). Cupcakes prepared with 25 per cent of <i>bajra</i> flour (Type B) was most acceptable and analysed for proximate content and mineral content along with standard cupcakes (Type A). Result shows that cupcakes prepared with <i>bajra</i> flour (Type B) was found to be high in protein (21.4±0.1 g), fat (32.4±0.4 g), fibre (1.2±0.3 g), calcium (52±0.7 mg) and iron (5.8±0.2 mg) than standard cupcakes (Type A). Addition of <i>bajra</i> flour increased nutrient density of cupcakes. Thus replacement of traditional food like refined flour with <i>bajra</i> for preparing cupcakes is feasible and beneficial too and also were very well accepted. <i>Bajra</i> is low cost cereal, so it is economical. It can be used as a healthy alternative to other grain to make our diet more wholesome and nutritious.</p>

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**INTRODUCTION**

In the recent years there has been an increasing recognition of the importance of millets as the substitution for major cereal crops. Almost whole of the pearl millet produced in India is consumed in the form of various foods depending on the region and their food habits. The percentage of crude protein, fat, crude fiber and ash content of pearl millet as reported in various analytical studies ranges from 7.02 to 13.67, 4.02 to 7.80, 0.54 to 3.00 and 0.25 to 2.54 per cent, respectively. Besides, the total quantity of protein, their amino acid composition is important for better nutritional quantity. The amino acids profile of pearl millet is better than that of sorghum and maize and is comparable to wheat, barley and rice (Hadimani *et al.*, 1995; Abdalla *et al.*, 1998). The consumption of pearl millet is very poor in spite of being nutritional superior to other crops. The majority of people in India are economically poor and thus, food choices for a

balanced diet are further restricted by poverty and insufficient supply of nutritious foods. Therefore, it becomes important to focus on promoting maximal use of locally available inexpensive foods rich in protein, calcium, iron, fiber etc. The blanching treatment was effective in retarding in antinutrient content of pearl millet seeds (Rekha *et al.*, 1999).

Substitution with *bajra* flour is a cost-effective way to increase protein, fibre, iron and other nutrient. Traditional preparation when modified like cupcakes with *bajra* flour could serve a means of enhancing nutritive value. Therefore, the present study was undertaken to know the effect of addition of *bajra* flour on sensory and nutritive value of cupcakes.

**METHODOLOGY**

**Procurement of pearl millet**

Pearl millet was procured from Sector-15 Market, Chandigarh.

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### JOURNAL INDEXING



## 16. A study on hygiene, food safety practices and customer's satisfaction among street food vendors

Link:

<https://www.researchgate.net/publication/346875940> Academic and Law Serials A STUDY ON HYGIENE FOOD SAFETY PRACTICES AND CUSTOMERS STASIFACTION AMONG STREE T FOOD VENDORS

Academic and Law SerialsISSN : 0973-2608  
e-ISSN : 2454-3608

### A STUDY ON HYGIENE, FOOD SAFETY PRACTICES AND CUSTOMERS STASIFACTION AMONG STREET FOOD VENDORS

**Uttara Singh\* and Aradhana Thakur\*\***

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Foods and Nutrition, Govt. Home Science College  
Sector 10-D Chandigarh.*

International Journal of Family and Home Science, Vol.13 (2) (May-Aug., 2017) (221-233)

**Abstract**

*A street food vendor has an important role in the cities and towns of many developing countries in meeting food demands. The study was done to assess the hygiene practices and food safety among street food vendors in the city of Chandigarh. A study was conducted among 100 vendors, 50 were mobile vendors and other 50 were fixed vendors. The relevant information was collected with questionnaire and observation method. Data was analysed in terms of frequency and percentage. Results showed there was 93% were male and only 7.0% were female vendors after survey in different sectors of Chandigarh. Forty two percent vendors sold snacks but 58% sold full meal. Sixty four percent vendors clean their surroundings but 36.0% were not clean their surrounding. 83% were dispose garbage in open vessel and only 14% were dispose garbage in dustbin. Personal hygiene was not also observed, as the vendors never covered their heads, handled money and food at the same time and they did not wear overcoats/aprons and handled food with bare hand. Street food vendors were not aware of safe street training programme and hygienic and sanitary practices.*

**Key words:** Food safety, Sanitation, Street food, Vendors, Fast food.

**Introduction**

**F**ood is one of the basic needs for all living beings. Like, we cannot live without air and water, we cannot live without food. (Joshi 2011) In India, during recent years there is an increasing trend in the sale and consumption of food at public places. Food street vendors have a long tradition throughout the world. The street foods play an important

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## 17. Effect of atmospheric cold plasma (ACP) with its extended storage on the inactivation of *Escherichia coli* inoculated on tomato


Link: <https://www.sciencedirect.com/science/article/abs/pii/S0963996917305975>






 **Food Research International**  
Volume 102, December 2017, Pages 402-408

### Effect of atmospheric cold plasma (ACP) with its extended storage on the inactivation of *Escherichia coli* inoculated on tomato

Priyanka Prasad<sup>1</sup>, Deepak Mehta<sup>1</sup>, Vasudha Bansal<sup>1</sup>,   Rajender S. Sangwan<sup>1</sup>,  

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<https://doi.org/10.1016/j.foodres.2017.09.030> 

#### Highlights

- ACP treatment at 60kV for 15 min achieved maximum inactivation of *E. coli* ( $p < 0.05$ ).
- Inactivation of *E. coli* was largely effected by extended ACP treatment time.
- Mechanical rupturing of *E. coli* membrane was clearly observed in ACP treated tomato.



#### Abstract

The study investigated the efficacy of atmospheric cold plasma (ACP) treatment on inactivation of *E. coli* load during extended storage period of 48 h at both the temperatures of refrigeration (4°C) as well as room (25°C). The tomato samples were spot inoculated with *E. coli* and exposed to ACP at 15 and 60kV for 5, 10, 15, and 30min followed by their storage at 4°C and 25°C. The highest log reduction of 6 logCFU mL<sup>-1</sup> was achieved in population of *E. coli* after 15 min of ACP treatment at 60kV, which was sustained up to storage duration of 48 h at both the temperatures. Furthermore, significant reduction in *E. coli* was found at plasma treatment of 60kV in comparison to 15kV. The inactivation of *E. coli* was significantly ( $p < 0.01$ ) affected by combination of treatment higher voltage at extended treatment time, however, treatment time with prolonged storage of sealed ACP treated tomato was observed as a key factor in reduction of *E. coli*. In addition, investigation of *E. coli* exposed tomato surface was done using scanning electron microscopy that clearly showed the breakdown of cell cover of *E. coli* as a consequence of ACP. The study predicts the promising potential of the technique in sanitization of vegetables that are eaten raw like tomato.



## 18. Effect of drying techniques and treatment with blanching on the physicochemical analysis of bitter-gourd and capsicum

Link: <https://www.sciencedirect.com/science/article/abs/pii/S0023643817304097>


### Effect of drying techniques and treatment with blanching on the physicochemical analysis of bitter-gourd and capsicum

Deepak Mehta<sup>a</sup>, Priyanka Prasad<sup>a</sup>, Vasudha Bansal<sup>a</sup>,  , Mohammed Wasim Siddiqui<sup>b</sup>, Alka Sharma<sup>c</sup>

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#### Highlights


- Highest moisture was removed from solar dried bitter-gourd and capsicum.
- The maximum functional components were retained in solar dried vegetables.
- Solar dried vegetables attained the highest score of sensory acceptability.
- Solar drying proved to be a potent technique over hot air and open sun drying.

#### Abstract


Solar drying increases the quality and shelf life of the food product. In this study, three drying methods (solar, hot air, and sun drying) were used to evaluate the physicochemical properties of dried green colored vegetables (bitter-gourd and capsicum). In addition, drying treatment was coupled with blanching (hot water and steam) as pre-treatment. It was found that the maximum functional compounds (flavonoid and polyphenol) were retained in solar dried bitter gourd ( $0.43 \pm 0.02$  RE mg/g;  $0.12 \pm 0.01$  GAE mg/100g) and capsicum ( $1.15 \pm 0.11$  RE mg/g;  $1.29 \pm 0.01$  GAE mg/100g), respectively. Moreover, nutritional quality (vitamin A & C) was higher in solar dried ( $1.50 \pm 0.10$  I.U.,  $3.95 \pm 0.01$  I.U.;  $33.2 \pm 0.3$  mg/100g,  $49.8 \pm 0.1$  mg/100g) in comparison to hot air and open sun dried vegetables. However, hot water blanched vegetables showed significant less degradation of polyphenols, flavonoids, and chlorophyll ( $p > 0.05$ ) in relation to steam blanched vegetables in combination with solar drying. Also, solar dried vegetables attained the highest score of sensory acceptability. Therefore, it can be concluded that solar drying could be an effective technique over hot air and open sun drying for retaining better quality of dried vegetables.

## 19. Metal-organic frameworks: Challenges and opportunities for ion exchange/sorption applications





Link: <https://www.sciencedirect.com/science/article/abs/pii/S0079642517300026>







Progress in Materials Science  
Volume 86, May 2017, Pages 25-74





### Metal-organic frameworks: Challenges and opportunities for ion-exchange/sorption applications

[Pawan Kumar](#)<sup>a,1</sup>, [Anastasia Pournara](#)<sup>b,1</sup>, [Ki-Hyun Kim](#)<sup>c</sup>  , [Vasudha Bansal](#)<sup>d</sup>, [Sofia Rapti](#)<sup>b</sup>, [Manolis J. Manos](#)<sup>b</sup>  

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#### Abstract

Exposure to common ionic pollutants, such as heavy metal ions and toxic anions, is a major concern throughout the world due to their potential impacts on human health and the environment. Recently, metal-organic frameworks (MOFs) with ion-exchange properties have attracted great interest with respect to the capture of diverse hazardous cationic and anionic species. In fact, according to the investigations on these ion exchangers, their sorption capacities are recognized to be considerably superior to conventional materials. This review focused on metal-organic materials as sorbents for ions by surveying MOFs with respect to their exchange/sorption capacities in association with their synthesis and structural characteristics. We also described the recent development in MOF composites and their practical applications toward wastewater treatment. The sorption characteristics were also evaluated among the reported MOFs and then between MOFs and other sorbents. Finally, we described the future prospects for the research and development in materials for ion-exchange based on MOF technology.

## 20. Progress in the sensing techniques for heavy metal ions using nanomaterials

Link: <https://www.sciencedirect.com/science/article/abs/pii/S1226086X17302873>



Journal of Industrial and Engineering Chemistry  
Volume 54, 25 October 2017, Pages 30–43

ELSEVIER

Review

### Progress in the sensing techniques for heavy metal ions using nanomaterials

Pawan Kumar <sup>a,1</sup>, Ki-Hyun Kim <sup>b</sup>, Vasudha Bansal <sup>c</sup>, Theodore Lazarides <sup>d</sup>, Naresh Kumar <sup>e</sup>

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#### Highlights

- Heavy and transition metals ions (HTMs) are major concern due to potential health hazards.
- Merits/demerits of different sensing techniques are discussed using recent prominent studies.
- The performance of nanomaterials is discussed for sensing of HTMs.
- Nanomaterials are found as the perceptive tool for HTMs sensing.

#### Abstract


The widespread pollution of toxic metals has drawn much attention due to its potential to harm both human health and the environment. Recently, a large volume of scientific literature has identified a potent role for nanomaterials in capturing, separating, and probing for such hazardous pollutants. This review discusses the opportunities and challenges in applying nanomaterials to sense hazardous metals in relation to their general working principles. This review evaluates their performance and advantages about conventional analytical methods. Our review also describes the basic features of this developing field to help establish a plan to counteract heavy metal ions contamination.

## 21. Review of the quantification techniques for polycyclic aromatic hydrocarbons (PAHs) in food products




Link: <https://www.tandfonline.com/doi/abs/10.1080/10408398.2015.1116970>


Original Articles

# Review of the quantification techniques for polycyclic aromatic hydrocarbons (PAHs) in food products

Vasudha Bansal, Pawan Kumar, Eilhann E. Kwon & Ki-Hyun Kim 

Pages 3297-3312 | Accepted author version posted online: 20 Dec 2015, Published online: 23 May 2017

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### ABSTRACT

There is a growing need for accurate detection of trace-level PAHs in food products due to the numerous detrimental effects caused by their contamination (e.g., toxicity, carcinogenicity, and teratogenicity). This review aims to discuss the up-to-date knowledge on the measurement techniques available for PAHs contained in food or its related products. This article aims to provide a comprehensive outline on the measurement techniques of PAHs in food to help reduce their deleterious impacts on human health based on the accurate quantification. The main part of this review is dedicated to the opportunities and practical options for the treatment of various food samples and for accurate quantification of PAHs contained in those samples. Basic information regarding all available analytical measurement techniques for PAHs in food samples is also evaluated with respect to their performance in terms of quality assurance.

**KEYWORDS:** [Analytical methods](#) [Food products](#) [Polycyclic aromatic hydrocarbons](#) [GC-MS](#) [HPLC](#)

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## 22. Nanostructured materials: a progressive assessment and future direction for energy device applications

Link: <https://www.sciencedirect.com/science/article/abs/pii/S0010854517302217>



 Coordination Chemistry Reviews  
Volume 353, 15 December 2017, Pages 113-141

Review

### Nanostructured materials: A progressive assessment and future direction for energy device applications

Pawan Kumar<sup>a</sup>, Ki-Hyun Kim<sup>b</sup>, , Vasudha Bansal<sup>c</sup>, Parveen Kumar<sup>d</sup>

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#### Highlights

- Due to a rapid increase in energy consumption, it is important to offer clean energy provisions.
- Common devices for energy storage cannot fully accommodate the practical requirements.
- The use of nano-sized particles is important for highly efficient energy technologies.
- The synthesis and fabrication of NMs are proposed as the key future energy device applications.

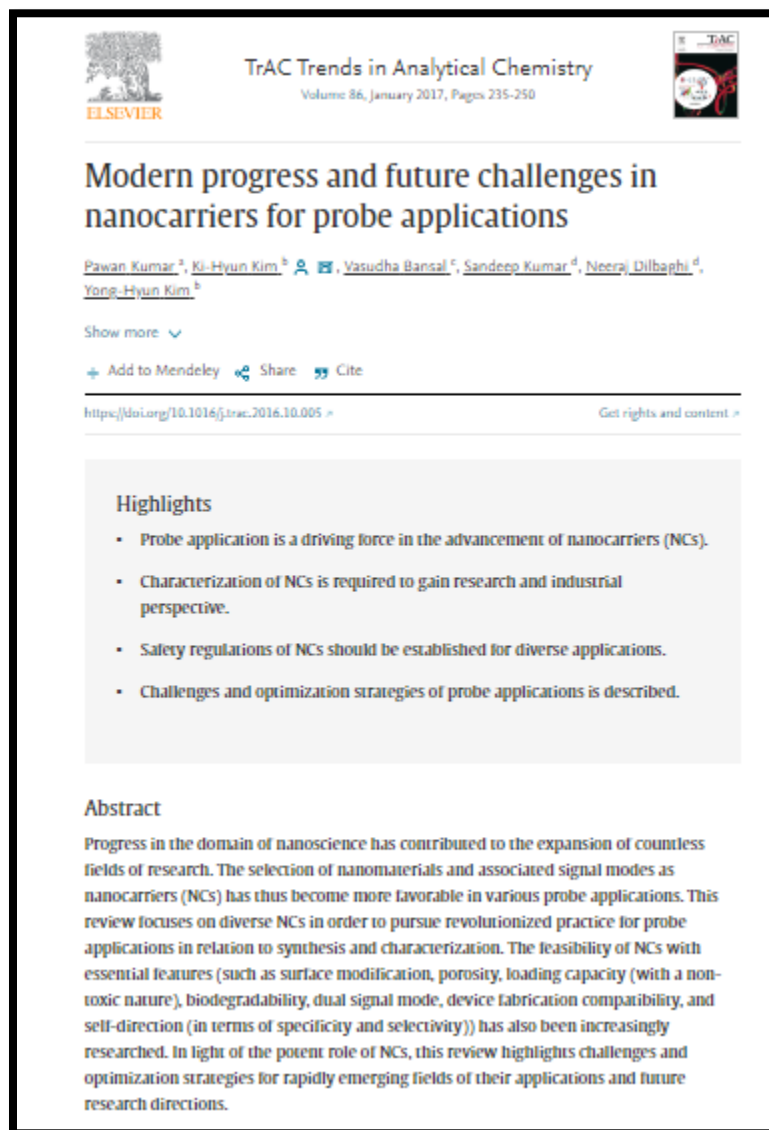
#### Abstract

Nanostructured materials (NMs) are acknowledged as a viable energy storage alternative to effectively replace conventional materials. With this regard, the development of NMs (nanostructured inorganic materials, metal-based nanomaterials, carbon nanomaterials, coordination polymers, etc.) as energy materials has experienced exceptional progress, especially in the area of high-performance energy storage devices (e.g., supercapacitors, thin film batteries, rechargeable Li/Na batteries, redox flow batteries, and other NM-based batteries). In this review, we critically assess the progress made toward the research and development of NMs for energy device applications. Furthermore, this review is also structured to cover the technical advantages and challenges of NMs in



## 23. Modern progress and future challenges in nanocarriers for probe applications

Link: <https://www.sciencedirect.com/science/article/abs/pii/S0165993616301285>



The image shows a screenshot of a scientific article page. At the top left is the Elsevier logo. The journal title is "TrAC Trends in Analytical Chemistry" with the volume and issue information "Volume 86, January 2017, Pages 235-250". The article title is "Modern progress and future challenges in nanocarriers for probe applications". The authors listed are Pawan Kumar<sup>a</sup>, Ki-Hyun Kim<sup>b</sup>, Vasudha Bansal<sup>c</sup>, Sandeep Kumar<sup>d</sup>, Neeraj Dilbaghi<sup>d</sup>, Yong-Hyun Kim<sup>b</sup>. There are icons for social media and a "Show more" dropdown. Below the title, there are options to "Add to Mendeley", "Share", and "Cite". A DOI link is provided: <https://doi.org/10.1016/j.trac.2016.10.005>. A "Highlights" section contains four bullet points. An "Abstract" section follows, starting with "Progress in the domain of nanoscience has contributed to the expansion of countless fields of research..."

**TrAC Trends in Analytical Chemistry**  
Volume 86, January 2017, Pages 235-250

### Modern progress and future challenges in nanocarriers for probe applications

Pawan Kumar<sup>a</sup>, Ki-Hyun Kim<sup>b</sup>, Vasudha Bansal<sup>c</sup>, Sandeep Kumar<sup>d</sup>, Neeraj Dilbaghi<sup>d</sup>, Yong-Hyun Kim<sup>b</sup>

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#### Highlights

- Probe application is a driving force in the advancement of nanocarriers (NCs).
- Characterization of NCs is required to gain research and industrial perspective.
- Safety regulations of NCs should be established for diverse applications.
- Challenges and optimization strategies of probe applications is described.

#### Abstract

Progress in the domain of nanoscience has contributed to the expansion of countless fields of research. The selection of nanomaterials and associated signal modes as nanocarriers (NCs) has thus become more favorable in various probe applications. This review focuses on diverse NCs in order to pursue revolutionized practice for probe applications in relation to synthesis and characterization. The feasibility of NCs with essential features (such as surface modification, porosity, loading capacity (with a non-toxic nature), biodegradability, dual signal mode, device fabrication compatibility, and self-direction (in terms of specificity and selectivity)) has also been increasingly researched. In light of the potent role of NCs, this review highlights challenges and optimization strategies for rapidly emerging fields of their applications and future research directions.

## 24. Study on the Risk Factors of Obesity among School Going Children (9-12 Years) of Chandigarh

Link: <https://www.ijsr.net/archive/v8i4/ART20196660.pdf>



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## 25. Nutritional Status of Pregnant Women Visiting Government Hospital, Chandigarh





## 26. Synthesis, Biological Evaluation, Molecular Docking and DFT Study of Potent Antileishmanial Agents Based on the Thiazolo[3, 2-a ]pyrimidine Chemical Scaffold




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Full Paper

### Synthesis, Biological Evaluation, Molecular Docking and DFT Study of Potent Antileishmanial Agents Based on the Thiazolo[3,2- $\alpha$ ]pyrimidine Chemical Scaffold

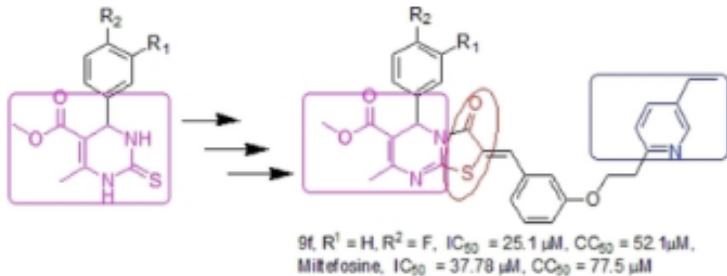
Radha N. Chaturvedi, Mohd Arish, Mohammad Kashif, Varinder Kumar, Dr. Reenu, Dr. Krishnalal Pendem, Dr. Abdur Rub , Prof. Sunita Malhotra 

First published: 12 March 2018 | <https://doi.org/10.1002/slct.201800056> | Citations: 5

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#### Graphical Abstract

A novel series of compounds containing thiazolo[3,2- $\alpha$ ]pyrimidine chemical scaffold were designed and synthesized and screened for their antileishmanial activity against *Leishmania donovani*. One compound **9f**, showed excellent antileishmanial activity with  $IC_{50}$  25.1  $\mu$ M as compared to Miltefosine with  $IC_{50}$  37.78  $\mu$ M. Molecular docking studies showed that LDCC-9f complex has highest binding affinity of  $-10.2$  kcal mol $^{-1}$ . DFT studies including HOMO/LUMO studies were also performed to explore the molecular properties of lead compound.



**9f**,  $R^1 = H$ ,  $R^2 = F$ ,  $IC_{50} = 25.1$   $\mu$ M,  $CC_{50} = 52.1$   $\mu$ M,  
Milttefosine,  $IC_{50} = 37.78$   $\mu$ M,  $CC_{50} = 77.5$   $\mu$ M

#### Abstract

A series of 20 compounds having thiazolo[3,2- $\alpha$ ]pyrimidine chemical scaffold were synthesized and evaluated for their antileishmanial activity against promastigotes of *Leishmania donovani*. Amongst all, two compounds showed promising antileishmanial activity in comparison to other compounds. Inhibitory concentration 50% ( $IC_{50}$ ) was calculated as 42.1  $\mu$ M and 25.1  $\mu$ M with selectivity index of 8.3 and 6.05, respectively against Miltefosine (reference drug) 37.78  $\mu$ M with selectivity index of 2.05. To confirm the target of these molecules, we modelled *Leishmania donovani*  $Ca^{2+}$  ion channel (LdCC) protein and performed the docking analysis of the best antileishmanial activity exhibiting inhibitors. The free energy of binding was observed as  $-10.2$  and  $-9.6$  kcal mol $^{-1}$  in comparison to reference drug  $-6.2$  kcal mol $^{-1}$ . It also makes several hydrogen bonds with our conserved residue Ser1655, Tyr1598 and Asn927. Furthermore, several hydrophobic contacts were also observed within the pocket. Finally, computational work employing density functional theory (DFT) was also carried out to investigate the electronic properties of the synthesized compounds. The in vitro and in silico activities conclusively revealed that our lead compounds may be used as a novel therapeutics against leishmaniasis.

## 27. A study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India

**Link:**<https://www.researchgate.net/publication/327480147> A study on sanitation hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh India

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**A study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India**

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**Abstract:**  
The present study were carried out to assess the hygiene practices and food safety among street food vendors in the city of Chandigarh. It includes 100 samples of vendors. Fifty vendors were mobile and other 50 was fixed vendors. A self planned questionnaire was used for data collection for the vendors. The questionnaire included questions about demographic information, hygiene practices and food safety. Thirty eight percent of vendors used stalls, but did not uphold their stalls well. Eighty-three per cent of the vendors had thrown garbage in the open vessel and 14.0% used dustbin for dispose garbage. Personal hygiene was also observed which indicated that the vendors never wear the head covers, handled food with bare hand and they did not wear overcoats/aprons as well. Street food vendors were not aware of hygienic and sanitary practice.

**Keywords:** Chandigarh area, Food safety, Sanitation, Street food, Vendors

**INTRODUCTION**  
Lifestyle changes and socio economic factors creates very small space for consumers to look at other alternatives one of which would be to prepare one's own meal (Kok and Balkaran, 2014). Mishandling and disregard of hygienic measures on the part of the food vendors may enable pathogenic bacteria to come into contact with food and in some cases survive and multiply in enough numbers to cause illness in the consumers (Chirag et al, 2013). The World Health Assembly (WHA) adopted a resolution in which, the World Health Organization (WHO, 1996) was asked "to give greater emphasis on food safety with the goal of developing suitable, integrated food safety systems for the reduction in health risk along the entire food chain, from main producer to the consumers". By WHO, five keys to safer food are: (i) Keep clean (ii) Separate raw and cooked (iii) Cook thoroughly (iv) Keep food at safe temperatures and (v) Use safe water and raw materials. The word "Sanitation" is derived from the Latin word "Sanitas" which means "health". It is the creation and maintenance of hygienic and healthful conditions while processing, preparing and handling food. Sanitation is a science to provide wholesome food handled in hygienic environment by the food handlers to prevent contamination

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Received: April 3, 2017  
Revised: June 11, 2018  
Accepted: July 30, 2018

**How to Cite**  
Thakur, A. and Singh, U. (2018). A study on sanitation, hygiene practices and food safety knowledge among food vendors in different sectors of Chandigarh, India. *Journal of Applied and Natural Science*, 10(3): 931 - 934

(Solanki, 2008). Therefore, the present investigations were conducted to assess the water, sanitation and hygiene (wash) practices and food safety knowledge among food vendors.




**MATERIALS AND METHODS**

**Study area:** The study was conducted in different sectors of Chandigarh. The data were collected by two methods i.e. Questionnaire method and Observation method. Questionnaire was a set of printed written questions about a choice of answers, devised for the purposes of a survey. Observation showed 93 % male vendors and 7 % female vendors; and 42.0% vendors sold chaat / snacks. Likewise, 58.0 % (42 fixed and 16 mobile) vendors sold full meal. The samples were selected by Purposive Random Sampling method. Hundred Street vendors were selected randomly from different sectors. Fifty vendors were those who served food at stall or mobile vending and other 50 were those who served food at dhaba or fixed vending. The information was gathered either by oral interview/ written questionnaire. A series of questions had been designed to elicit information, which was filled in by all participants in the Questionnaire.

**Data collection:** After completing the data collection, the questionnaire of vendors was sorted out and arranged in the series. The data were trans-

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## 28. Metal-organic frameworks (MOFs) as futuristic options for wastewater treatment



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## Metal-organic frameworks (MOFs) as futuristic options for wastewater treatment

Pawan Kumar <sup>a</sup>, Vasudha Bansal <sup>b</sup>, Ki-Hyun Kim <sup>c</sup>  , Eilhann E. Kwon <sup>d</sup>  

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### Abstract

To date, the utilization of metal-organic frameworks (MOFs) is found from numerous fields of applications including separation, storage, sensing, and many other miscellaneous ones. Their feasibility toward wastewater treatment (WWT) for several pollutants (e.g., heavy metal ions, pesticides, volatile organic pollutants (VOCs), and other hazardous chemicals) has not yet been thoroughly evaluated. Here, we attempted to provide the current technical advances associated with MOF-based WWT in reference to conventional materials. Our review emphasized current perspectives on contamination processes in water systems and performance of MOF in diverse WWT applications.

**29. Isolation and Characterization of Antimicrobial Peptides from *Datura innoxia* leaves having antimicrobial activity against selected bacteria.**

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**ISOLATION AND CHARACTERIZATION OF ANTIMICROBIAL PEPTIDES FROM *DATURA INOXIA* LEAVES HAVING ANTIMICROBIAL ACTIVITY AGAINST SELECTED BACTERIA**

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**ABSTRACT**

The rapid emergence of multidrug-resistant infections has presented a serious challenge to antibiotic treatment posing major health threat over the past decades. Antimicrobial peptides (AMPs) play an important role in host defense mechanisms and can be used as an alternative source to develop more potent antibiotic against drug-resistant microbes. AMPs are ubiquitous and found in diverse organisms ranging from microorganisms to animals. AMPs have been described as an evolutionary ancient weapon against microbial infection. Plants are the precious source of natural antimicrobial molecules including antimicrobial peptides known as plant antimicrobial peptides (PAMPs). PAMPs exert multiple antimicrobial activities, which includes membrane permeabilization and interference with DNA, RNA and protein synthesis that might provide a suitable approach to prevent bacteria from developing resistance. The present research work was aimed at isolation and characterization of antimicrobial proteins from *Datura innoxia* leaf extract. Leaf extract of *Datura innoxia* showed antimicrobial activity against *Staphylococcus aureus* and *Bacillus subtilis* whereas no activity was observed against *Escherichia coli* and *Candida albicans*. Maximum zone of inhibition (10 mm) was found against *S. aureus* and minimum (2 mm) against *B. subtilis* using 95% protein pellet. In Tricine SDS-PAGE, six, four and two bands lower than 26.6 kDa were observed in dialyzed samples of 50%, 75% and 90% protein pellet of the extract respectively. Protein bands lower than 26.6 kDa were observed in all the above-mentioned protein pellet of the extract that showed antimicrobial activity. These protein bands were identified as AMPs which may be used for

### 30. A novel approach against drug resistant microorganisms

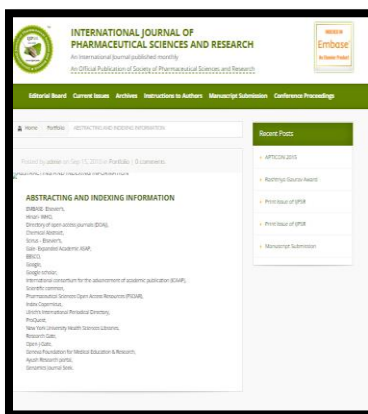
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**Abstract**

Antimicrobial peptides (AMPs) are the crucial factors, which plays an important role in host defense mechanisms. AMPs are ubiquitous and found in diverse organisms ranging from microorganisms to animals. Plants are the precious source of natural antimicrobial molecules including antimicrobial peptides known as plant antimicrobial peptides (PAMPs). PAMPs can be divided into different families based on their, molecular weight, activity against different microbes, structure, charge of molecules, content of disulphide bond and mechanism of action. Based on number of cysteine residues and disulphide bonds, PAMPs are categorized into six main families. These peptides may lead to degradation of nutrients that are specific or essential for microbes to grow, interfering with microbial membrane or by conflicting with their metabolism. PAMPs exert multiple antimicrobial activities which includes membrane permeabilization, interference with DNA, RNA and protein synthesis that might provide a suitable approach to prevent bacteria from developing resistance. This review provides an overview of all the major plant AMP families including their structure, function, mechanism of action and antimicrobial activity.

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**31. Student problems and attitude towards school**



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**RESEARCH PAPER**  
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### Student problems and attitude towards school

**SUDHA KATYAL AND URVASHI KHANNA\***  
Government Home Science College, Sector 10D, Chandigarh (U.T.) India

**ABSTRACT**

The present investigation aimed to get an insight into student problems among adolescent boys and girls in relationship with attitude towards school. The study was carried out in the schools of Chandigarh on a sample of 200 adolescents (100 Boys + 100 Girls) from four Schools were randomly selected. The tools used in the investigation were The Problem Checklist (Bhagia, 1970), Rao's School Attitude Inventory (Rao's, 1974). The finding revealed irrespective of caste and religion, majority of girls had academic problems while boys had social, personal and school administration problems. The result also showed no significant difference between boys and girls with regard to attitude towards school.

**Key Words :** Student problems, Attitude towards school

**INTRODUCTION**

Education is where a student's knowledge gets formed from. Education enables the student to understand himself, his strengths and weakness in his life. A child learns from his home, school and then from the society and thus, every individual with whom the child interacts, influences his life later on. In a study by Chavan (2009) high rate of academic decline was found among students, in addition, 8.82% of the students were found to be feeling "Life as a burden", 6.6% of the students with suicidal ideas and 0.39% with deliberate self-harm. Students with high self-esteem are more likely to be self-efficacious and set higher goals in schools. Students with high self-esteem are more likely to have positive relationships with peers as well as with teachers (Orth *et al.*, 2012). Students all over the world face a number of problems which dishearten them. Students can face many problems like personal, emotional, behavioural, mental health issues, poor school environment, bullying and family and parental problems.

In psychology, an attitude is a psychological construct. It is a mental and emotional entity that inheres in or characterizes a person. It is an individual's predisposed state of mind regarding a value and it is precipitated through a responsive expression towards a person, place, thing, or event which in turn influences the individual's thought and action. The term "school attitude," representing a student's positive or negative feelings associated with school, describes students' subjective well-being in school. Positive attitude is the belief that good things will happen and that one's efforts will be crowned with success. Positive attitude is based on optimism, hope and belief that hard work is never wasted nothing gears up people to make whole-hearted efforts to perform some task as positive attitude (Myers, 2012). Students with positive orientation toward school show high measures of self-efficacy, lower level of depression, less likely to achieve alcohol, less likely to involve in socially deviant behaviour, more stable in employment, healthier, more active as a citizen. Students who are on the "right track," with little time or interest in engaging in destructive or problem behaviour. They also are found to have more positive relations with teachers and other adults (Jessor *et al.*, 1995).

**Objectives :**

- To study student problems and attitude towards school of 8<sup>th</sup> grade students.
- To find out gender difference, if any, in student

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## 32. A correlation among student problems

## A CORRELATION AMONG STUDENT PROBLEMS

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### ABSTRACT

Students play a significant role in the development of its nation in holistic way. The most critical phase of students in their life is when they enter adolescence. The present investigation aimed to get an insight into student problems among adolescent boys and girls. The research was conducted to check the relationship of student problems with different variables like self esteem, maladaptive behaviour, self worth, exam stress, emotional problems, drop outs and aggression. Another objective of the research is to correlate student problems with different variables. The results of the study will be helpful in order to evaluate and to get knowledge about student problems and how it is affecting their daily life and we can deal with it.

### INTRODUCTION

#### Student Problems

Students all over the world face a number of problems which dishearten them. It leads to sheer desperation among the student's community giving rise to unrest among students. Student life has probably become more difficult than at any time before. Parent's previous experience and education does not always equip them in dealing with such pressures. In a study by Chavan (2009) high rate of academic decline was found among students, in addition, 8.82% of the students were found to be feeling "Life as a burden", 6.6% of the students with suicidal ideas and 0.39% with deliberate self-harm. Over a period of time these can badly hamper a student's psyche. Usually students face general symptoms of emotional imbalances as part of growing up as adolescents and these become more pronounced because of the hectic student life. All such negativeness can be effectively controlled with the aid of participation, right from the parents to education ministers.

#### Student Problems

Student problems can be of various types. Some of them have been discussed in details:

##### 1. Personal Problems

##### • Intellectual or Cognitive Disability

Intellectual or cognitive disability can start at any time before a child reaches at the age of 18 years. Students who have intellectual problems can also have many other problems in their lives. Examples of coexisting condition may include cerebral palsy, seizure disorder, vision impairment, hearing loss and Attention Deficit/Hyperactivity Disorder (ADHD). Students with severe intellectual disabilities are more likely to have additional limitations than students with milder intellectual disabilities.



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### 33. Assessment of Dietary Intake and Physical Activity of School Going Children in District Kangra Himachal Pradesh

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ISSN: 2319-7064  
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## Assessment of Dietary Intake and Physical Activity of School Going Children in District Kangra Himachal Pradesh

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<sup>2</sup>Research Scholar, Foods and Nutrition, Govt. Home Science College, Sector 10-D, Chandigarh, India

**Abstract:** *The present study was undertaken with the objectives of assessment of dietary intake and physical activity of school going children (13-17 years) in District Kangra Himachal Pradesh. Children were selected from three government and three private schools (13-17 years). The method for data collection was a self-designed questionnaire, which covered parameters like demographic profile, anthropometric measurements, dietary information and physical activity of children belonging to government and private school going children. The present study revealed that private school children showed better anthropometric measurements (18.63%). Private school children consumed breakfast, skipped less meals, consumed lunch (55.8%), carried packed lunch, consumed fruit (32.3%) and salad (35.2%) every day and got involved in physical activities (64.7%) in school as compared to government school children (33.7%). The study showed that protein, energy, calcium and iron consumption was more in private school going children than government school children. The study concluded that private school children showed better dietary pattern, anthropometric measurements, more physically activity.*

**Keywords:** Anthropometry, Demographic Profile, Dietary Intake, Balanced diet and Physical activity

### 1. Introduction

Nutrition is a determinant of health. A well balanced diet increases the body's resistance to infection, thus warding off a host of infections as well as helping the body fight existing infection. Depending on the nutrient in question, nutritional deficiency can manifest in an array of disorders like protein energy malnutrition, night blindness, iodine deficiency disorders, anemia, stunting, low Body Mass Index and low coronary heart disease, hypertension, non-insulin dependent diabetes mellitus and cancer, among others. Food intake patterns and overweight are associated with different immediate complications and major long-term consequences including cardiovascular diseases, diabetes, high blood pressure, stroke, cancer, dental caries, asthma, and some other psychological disorders like depression (Shepherd et al 2006).

Adolescence a period of transition between childhood and adulthood, occupies a crucial position in the life of human beings. This period is an important physiological phase of life characterized by an exceptionally rapid rate of growth and development both physical and psychological. Adolescent growth and development is closely linked to the diet they receive during childhood and adolescence. Adequate nutrition of any individual is determined by two factors. The first is the adequate availability of food in terms of quantity as well as quality which depends on socio-economic status, food practices, cultural traditions and allocation of the food. The second factor is the ability to digest, absorb and utilize the food in the body. Nutritional needs during this period are increased because of the increased growth rate and changes in body composition associated with puberty. The dramatic increase in energy and nutrient requirements coincides with other factors that may affect adolescent's food choices and nutrient intake and thus nutrition status. There are many body changes which results due to the influence of hormones. Greatest nutrients need for boys is between 12-15 years and for girls is 10-13 years. They attain their adult stature between 18-20 years but bone mass continues to increase upto age of 25 years. With profound growth of adolescence there is increased demands for energy, protein, mineral and vitamins (Srilakshmi 2016).

Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure. Physical activity includes work related, recreational and leisure time activity (Caspersen et al 1985). Regular physical activity is an essential component of personal and public health programs associated with reduced risk for specific health problems and lower all causes of mortality. Technological advances of modern society have contributed to a sedentary lifestyle that has changed the phenotype. Children today weigh more and have higher body mass index than their peers of just a generation earlier. Lack of participation in physical activity has contributed to a greater prevalence of pediatric obesity, a decrease in fitness and greater risk for diseases. Adolescents who perform regular physical activity consistently have a healthier cardiorespiratory fitness profile and greater functional capacity than their sedentary peers (Blair et al 1989). Regular physical activity in children also is associated with the maintenance of good mental health and self-esteem. These outcomes of physical activity are associated with improved psychological and emotional functioning that may be carried out into adulthood (Rosset et al 1988).

Among children, physical activity is a highly multidimensional construct, traditionally conceptualized as any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above the

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### 34. Nutritive Value And Proximate Composition Of Food Products Using Soyabean Flour (Glycine Max).

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## NUTRITIVE VALUE AND PROXIMATE COMPOSITION OF FOOD PRODUCTS USING SOYABEAN FLOUR (*GLYCINE MAX*)

<sup>1</sup>Uttara Singh and <sup>2</sup>Anubhuti Dewan  
<sup>1</sup>Assistant Professor and <sup>2</sup>M.Sc Scholar

Government Home Science College, Sector-10, Chandigarh.

### Abstract

The present study was undertaken with the objectives of evolving food products containing soyabean flour to find out, nutritive value and proximate composition and mineral content of standard and most acceptable soyabean flour products. Highest energy content was observed in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcake and *Namkeen Modak* 1081, 661.5, 616.5, 1184.8 and 490.5 kilocalories respectively. Protein content in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcakes and *Namkeen Modak* were 43.2, 43.2, 43.4, 51.2 and 45.7 gram respectively. Carbohydrate content in Type B *Ladoo*, *Mathri*, *Namakapara*, Cupcakes and *Namkeen Modak* were 107, 60.9, 60.9, 110.3 and 67.4 gram respectively. Fat content in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcake and *Namkeen Modak* were 39.6, 44.8, 39.8, 77.4 and 39.6 gram respectively. Fibre content in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcake and *Namkeen Modak* were 3.8, 3.9, 3.9, 3.7 and 3.8 gram respectively. Calcium content in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcake and *Namkeen Modak* were 256.1, 259.06, 259.06, 282 and 256.1 milligram respectively. Iron content in Type E *Ladoo*, *Mathri*, *Namakapara*, Cupcake and *Namkeen Modak* were 11.2, 10.6, 10.5, 11.7 and 11.2 milligram respectively. Soyabean flour (*Glycine max*) contains moisture 8.1 per cent, protein 43.2 gram, crude fibre 3.7 gram, fat 19.5 gram, ash 4.5 per cent, carbohydrate 20.9 gram, calcium 240 milligram, iron 10.4 milligram, phytic acid 0.81 milligram and polyphenols 0.54 milligram per 100 gram. Biochemical estimation revealed that soyabean flour *Mathri* and *Namkeen Modak* have higher carbohydrate content and *Ladoo* and *Namakapara* have higher amount of protein and calcium. All the products have higher fat and iron content than standard food products.

**Index Terms-** Anti-nutritional, Proximate Analysis, Nutritive Value, Soyabean.

### Introduction

Soyabean is an important staple food throughout large parts of Asia and western Africa containing more proteins than rice. It has been used in Africa and India as a staple food for thousands of years. It grows well in a fertile soil. Soyabeans are a species of legume that have become one of the most widely consumed foods in the world. They are extremely useful for human health, and they are easy to cultivate as well. In June, soyabean crop is usually sown in India and it is a *kharif* crop. In some states, it is cultivated two times a year. The harvesting period for soyabean crop in India comes around September and October. It is a highly dependent on rain and a change in the rainfall pattern



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### 35. To assess the nutritional status and dietary pattern of celiac disease patients.

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## To assess the nutritional status and dietary pattern of celiac disease patients

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### ABSTRACT

Celiac disease also known as gluten sensitive enteropathy, is a permanent intolerance to gluten, which causes damage to the small bowel mucosa by an autoimmune mechanism in genetically susceptible individuals. Nutritional status and dietary pattern of celiac patients are the most important factors to be kept in consideration for their healthy living. The present study was undertaken with the objectives of studying the nutritional status and dietary pattern of celiac disease patients. The study included 130 respondents visiting PGI. The present study revealed that prevalence of celiac disease was found to be more in females (60%) than in males (40%) and maximum number of respondents were found in 19-49 age group i.e. (57.7%). It was observed that nutritional deficiency such as iron (24.6%), calcium (10.8%), vitamin A, and vitamin D (4.7%) occurred in celiac patients. So they have to include nutritional supplement in their diet. The average daily intake of calories and protein was below RDA. The calcium intake among the patients was also below the recommended dietary allowances, the intake of folic acid was found to be approximately equal or above the RDA. Majority consulted the dietician for a proper diet but nearly 73% of the respondents followed the prescribed diet (gluten free diet). Nutrition deficiencies mainly of iron and calcium were also present in the respondents. Majority of respondents reported poor dietary intake thus affecting their nutritional status.

**Key Words :** Celiac, Dietary pattern, Enteropathy, Gluten, Nutritional status

### INTRODUCTION

Celiac disease is also known as gluten sensitive enteropathy, is a permanent intolerance to gluten, which causes damage to the small bowel mucosa by an autoimmune mechanism in genetically susceptible individuals. It is a chronic disorder caused by the inflammation of T-cell response to the storage proteins in wheat (gliadin), rye (secalin), and barley (hordein), which are collectively called "gluten" and characterized by the presence of typical auto antibodies and histological alterations of the small bowel mucosa. Ingestion of gluten by genetically predisposed people precipitates an uncontrolled T-cell-driven inflammatory response that leads to disruption of the structural and functional integrity of the small bowel mucosa (Rashid *et al.*, 2005).

Gluten is a general term used to describe a mixture

of storage proteins, including prolamins, hordains and secalins found in wheat, barley and rye. Environmental factors such as gluten introduction at childhood, infectious agents and socioeconomic features, as well as the presence of HLA-DQ2 and HLA-DQ8 haplotypes or genetic variations in several non-HLA genes contribute to the development of celiac disease. Approximately 95% of celiac disease patients express HLA-DQ2, and the remaining patients are usually HLA-DQ8 positive (Mameli *et al.*, 2013).

### Types of celiac disease :

Classical celiac disease: Patients have signs and symptoms of malabsorption, including diarrhea, steatorrhea (pale, foul smelling, fatty stools), and weight loss or growth failure in children.

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**36 .Impact of ultra-sonication, ultraviolet and atmospheric cold plasma processing on quality parameters of tomato-based beverage in comparison with thermal processing**



**Link:**<https://www.sciencedirect.com/science/article/abs/pii/S1466856418306556>



## Impact of ultrasonication, ultraviolet and atmospheric cold plasma processing on quality parameters of tomato-based beverage in comparison with thermal processing

Deepak Mehta, Nitya Sharma, Vasudha Bansal, Rajender S. Sangwan, Sudesh Kumar Yadav  

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### Abstract


The aim of the study was to develop a tomato-based beverage and to investigate the effect of thermal (pasteurization) and non-thermal (ultrasonication, ultra-violet (UV), atmospheric cold plasma (ACP)) processing on the quality of a tomato-based beverage. The ultrasonication and ACP processing for 10 min put significant effect on  $L^*$  and  $a^*$  color values of the tomato beverage. All the processing techniques applied degraded ascorbic acid but maximum retention (95%) of ascorbic acid was found in ACP processed beverage. Furthermore, ACP processing of 10 min also had significant ( $p \geq 0.05$ ) effect on bioactive compounds like chlorogenic acid, sinapic acid and gallic acid in comparison to thermal and other non-thermal processing. Moreover, ACP for 10 min and ultrasonication for 15 min was found equivalent to thermal processing in microbial reduction and ACP processing for 10 min was found equivalent to pasteurization in reduction of yeast and mold count. Both thermal and non-thermal processing had insignificant ( $p \geq 0.05$ ) effects on pH, TSS and sugars of developed beverage. In summary, ACP processing for 10 min has emerged as the best processing method for retaining as well as improving the quality of the developed beverage.

**37 .Effect of high pressure processing (HPP) on microbial safety, physicochemical properties, and bioactive compounds of whey-based sweet lime (whey-lime) beverage**

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## Effect of high pressure processing (HPP) on microbial safety, physicochemical properties, and bioactive compounds of whey-based sweet lime (whey-lime) beverage

Vasudha Bansal , Kaunsar Jabeen, P. S. Rao, Priyanka Prasad & Sudesh Kumar Yadav

*Journal of Food Measurement and Characterization* 13, 454–465 (2019) | [Cite this article](#)

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### Abstract

The effects of high pressure processing (HPP) applying 500 MPa for 10 min at 25 °C on microbial inactivation and stability of quality parameters [bioactive compounds, phenolic content, antioxidant capacity, color, NEBI (non-enzymatic browning index), and sensory analysis] were studied. It was found that HPP treated whey-lime beverage achieved the maximum shelf-life of 120 days by keeping the microbial populations below the detection limit throughout the storage period ( $p < 0.01$ ). The effect of HPP was also compared with the heat treatment (90 °C for 60 s). HPP processing preserved the antioxidant capacity (54.2%) and color of the whey-lime during the entire storage period ( $p < 0.01$ ), whereas, heat processing degraded it to 76.7%. Furthermore, HPP treated whey-lime retained the maximum content of phenolics (60.2%) with sustained values of non-enzymatic browning index ( $0.181 \pm 0.03$ ) in comparison to heat (37.8%,  $1.97 \pm 0.2$ ). However, both treatments did not induce any major changes in pH and °brix values of whey-lime. Sensory quality parameters of untreated whey-lime degraded with storage, whereas, overall quality of pressurized samples were negligibly altered. Electron microscopy was used as a tool to find the damage induced to microbial cells. Investigation of the morphology showed the leakage of cellular debris owing to the rupture of their cellular membranes under HPP. Thus, HPP processing may lead to an immensely potential technology for the production of high quality whey-lime beverage over heat treatment.

### 38. Efficient and economic process for the production of bacterial cellulose from isolated strain of *Acetobacterpasteurianus* of RSV-4 bacterium

Link: <https://pubmed.ncbi.nlm.nih.gov/30579775/>

> *Bioresour Technol.* 2019 Mar;275:430-433. doi: 10.1016/j.biortech.2018.12.042. Epub 2018 Dec 14.

## Efficient and economic process for the production of bacterial cellulose from isolated strain of *Acetobacter pasteurianus* of RSV-4 bacterium

Vinod Kumar <sup>1</sup>, Devendra Kumar Sharma <sup>1</sup>, Vasudha Bansal <sup>1</sup>, Deepak Mehta <sup>1</sup>,  
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### Abstract

In the present investigation, several residues from agro-forestry industries such as rice straw acid hydrolysate, corn cob acid hydrolysate, tomato juice, cane molasses and orange pulp were evaluated as the economical source for the production of bacterial cellulose. The bacterial cellulose attained the significant yield of 7.8 g/L using tomato juice, followed by 3.6 g/L using cane molasses and 2.8 g/L using orange pulp after 7 days of incubation. Furthermore, the optimum pH and temperature of fermentation for maximum production of bacterial cellulose was 4.5 and  $30 \pm 1$  °C. The identified bacterium *Acetobacter pasteurianus* RSV-4 has been deposited at repository under the accession number MTCC 25117. The produced bacterial cellulose was characterized through FTIR, SEM, TGA and DSC and found to be of very good quality. The bacterial cellulose produced by identified strain on these various agro-waste residues could be a cost effective technology for commercial its production.

**Keywords:** *Acetobacter pasteurianus*; Agro-residues; Bacterial cellulose; Scale up; Tomato juice.

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### 39. (De)Coding Bodyscape: A Study of Select Visual Prints in the Nationalist Discourse

Link: <https://www.dujes.co.in/p/decoding-bodyscape-study-of-select.html>





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## Gaurav Kalra | DUJES Volume 27 | 2019 Issue

### (De)Coding Bodyscape: A Study of Select Visual Prints in the Nationalist Discourse

Gaurav Kalra is a PhD research scholar in the Department of English and Cultural Studies, Panjab University, Chandigarh (India). He has worked on the "Politics of Posture and Sartorial Sagacity: The Construction of Ascetic Masculinity in Vivekananda's Photographs and Posters" as a part of the project entitled *Manly Matters: Representations of Maleness in South Asian Popular Visual Practice* under the mentorship of Prof. Sumathi Ramaswamy, Duke University, Durham, North Carolina during 2017-2018. Theoretical and archival research, critical inquiry of national icon formations and visual constructs are the areas of research interest.

#### Abstract

The role of visual art as a political tool, especially during the colonial era, to disseminate multifarious ideological underpinnings has often remained at the center stage of the nationalist discourse. The paper critically scrutinizes deployment of visual art forms by nationalist elites for the ideological projection of the elitist strategies under the guise of the nationalist discourse. The national elite groups like brahmins, industrialists, agricultural landlords, capitalists, and the Western-educated Indians utilized visual culture to disseminate the notion of national consciousness among the masses. The forerunners of the anti-colonial movement knew the fact that without inducing the spirit of active participation and sacrifice in the consciousness of the masses, freedom was nothing but a utopian dream. Various art forms have been exploited to evoke the nationalist sentiments of the masses before and after independence. Visual art provided them an altogether different space to enter into the otherwise interior private sphere of the masses. This helped in widening the portfolio of the nationalist elite to sway the masses into their own nationalist strategies. The present paper will try to critically evaluate

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#### 41. Tautomerism, spectroscopic and computational analysis of Schiff base and its diphenyltin (IV) complex

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## Tautomerism, spectroscopic and computational analysis of Schiff base and its diphenyltin (IV) complex

Manpreet Kaur<sup>a</sup>, Harminder Kaur<sup>a</sup>, Akanksha Kapila<sup>a</sup>, Reenu<sup>b</sup>

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### Highlights

- Novel Schiff Base and its diphenyltin (IV) complex were synthesized.
- Different spectroscopic techniques i.e. FTIR, NMR & UV-Visible were applied to characterize synthesized complexes.
- Results obtained theoretically were compared with experimental.
- MEP, HOMO-LUMO, Global reactivity descriptors, NBO & NLO analysis were examined theoretically.

### Abstract

Present work deals with the synthesis of Schiff base and its corresponding diorganotin (IV) complex with general formula  $Ph_2SnL$  [Where Ph = Phenyl, L = 6,6'-((1Z,1'E)-((4-nitro-1,3-phenylene)bis(azanylylidene))bis(methanylylidene))bis(2-methoxyphenol)]. Synthesized Schiff base and organotin(IV) complex have been structurally characterized by various spectroscopic techniques namely FTIR,  $^1H$  and  $^{13}C$  NMR and UV-Visible. Computational investigation has been done at B3LYP/6-311+G(d,p) and MPW1PW91/6-311+G(d,p)/LANL2DZ level to obtain the molecular geometry, thermochemical values and vibrational frequencies for both Schiff base & its complex in the ground state. Potential energy distribution (PED) was also assigned for vibrational frequencies of Schiff base and its complex using VEDA software. Tautomerism of Schiff base was also investigated using DFT method. HOMO-LUMO energy distribution and electron density based parameters were calculated to understand the chemical behaviour of the Schiff base and its complex. A good correlation is obtained between experimental and theoretical results. Nucleophilic and electrophilic sites are investigated through the MEP computation. Intramolecular interactions of Schiff base and its complex have been analyzed using Natural bond order (NBO) analysis. Non-linear optical parameters (NLO) were investigated theoretically to check frequency shifting response of the Schiff base and its complex. Both Schiff base and its diphenyltin (IV) complex show good optical properties which can be further explored for the application in OLED devices.

**42. Effect of Copper Oxide Nanoparticles synthesized from Chemical Precipitation Method (Ex-situ) on the Mechanical Properties of Sansevieria Trifasciata Fiber extracted from Sansevieria Trifasciata Plant**

Link: <https://www.ijamtes.org/gallery/103-jan19.pdf>

## Effect of Copper Oxide Nanoparticles synthesized from Chemical Precipitation Method (In-situ) on the Mechanical Properties of Sansevieria Trifasciata Fiber extracted from Sansevieria Trifasciata Plant

Preeti Alagh\* and Dr. Rita Kant\*\*

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\*\*Assistant Professor University Institute of Fashion Technology,  
Panjab University, Chandigarh, India

### Abstract

*Sansevieria Trifasciata Plant was chosen for the study. The cellulosic Fiber was extracted by using retting technique of Fiber Extraction. Copper Oxide Nano Particles were applied on Sansevieria Trifasciata Fiber (STF) through In-situ method of Chemical Precipitation Process. The structure and morphology of the coated and un-coated STFs were examined by X-ray diffraction (XRD) and Field Emission Scanning Electron Microscopy (FESEM). These tests were performed in Sophisticated Analytical Instrument Facility, Panjab University, Chandigarh. These methods revealed that CuO Nano Particles are crystalline in nature and are absorbed onto the surface of STFs. The mechanical properties namely Breaking Strength, Tenacity and Elongation of uncoated and nanocoated STFs were evaluated. These tests were conducted in Northern India Textile Research Association. Results showed the changes in Breaking Strength and Tenacity which decreased whereas Elongation of the coated STF showed an increase after the application of Copper Oxide Nano Particles via In-situ Method of Chemical Precipitation Process.*

**Keywords:** Sansevieria Trifasciata Fiber, Breaking Strength, Tenacity, Elongation

### 1. Introduction

Nanotechnology is already a well-known science which takes advantage of novel properties of atoms and molecules at the dimensions of nanometer scale with 1 nanometer (nm) being equal to  $10^{-9}$  meter. Such materials exhibit extraordinary optical, mechanical, thermal and electrical properties which are quite distinct from the ordinary materials [1]. These properties are mainly due to high surface area to volume ratio of Nano Particles and the quantum-mechanical effects at nano scale.

Textiles are an integral part of our life with their everyday use in clothing, furnishing, house wares, and technical applications including smart textiles in electronics and biomedical sectors. Conventional methods for imparting different properties to textile fabrics are not suitable for inducing long-lasting durability, and the fabrics so prepared are most often seen to lose the induced properties after wearing and a few cycles of washing. Nanotechnology has emerged as a new process of preparing highly durable

**43. Effect of Copper Oxide Nanoparticles synthesized from Chemical Precipitation Method (In-situ) on the Mechanical Properties of Sansevieria Trifasciata Fiber extracted from Sansevieria Trifasciata Plant**

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**Keywords:** *Sansevieria Trifasciata Fiber, Breaking Strength, Tenacity, Elongation*

### 1. Introduction

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## 44. Antibacterial activity of antimicrobial peptide extracted from *Trianthema portulacastrum* Leaves

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### Antibacterial activity of antimicrobial peptide extracted from *Trianthema portulacastrum* Leaves

**Samriti, Rajesh Biswas and Kakoli Biswas**

**Abstract**  
Multidrug-resistant (MDR) infections have posed a major health threat over the past decades. The presently available antibiotics are unable to work against these MDRs. New strategies are being developed and developing potent antibiotic from antimicrobial protein peptides (AMPs) can be one of the important strategies to tackle MDRs as an alternative to synthetic antibiotic. AMPs are the crucial factors that play an important role in host defense mechanisms. Apart from secondary metabolites, plants are the major source of antimicrobial peptides mainly known as plant antimicrobial peptides (PAMPs). PAMPs mainly interact with phospholipids present in the cell wall of microorganisms that lead to membrane permeabilization. The present research work was an attempt to isolate novel antimicrobial peptides (AMPs) from the leaves of *Trianthema portulacastrum*. These AMPs showed antimicrobial activity against *Staphylococcus aureus* and *Bacillus subtilis* whereas no activity was observed against *Escherichia coli* and *Candida albicans*. Maximum zone of inhibition of 8mm and 4mm was found with 75% protein pellet against *Staphylococcus aureus* and *Bacillus subtilis* respectively. In Tricine SDS-PAGE, three bands lower than 26.6kDa were found in both 25% and 50% protein pellet and four bands were observed in 75% and 90% protein pellets. The antimicrobial peptides lower than 26.6kDa are the putative antimicrobial peptides, which may be used or altered to evolve new antibiotics against drug-resistant microbes.

**Keywords:** Plant antimicrobial peptides, thionins, defensins, tricine SDS-PAGE, *Trianthema portulacastrum*

**1. Introduction**  
According to the World health organization (WHO) report 2002 and 2003, on average about 35% of the world population relies on the traditional system of medicines, mainly on plant source for their health care. Therefore, such medicinal plants should be explored to access a variety of drug and active compounds [1-3]. Treatment of resistant microbes presents a serious challenge in the development of antibiotics. In the last decade, only few new moieties have been developed for the infectious microbes, however they have several side effects [4]. Plants have been a valuable source of natural products for maintaining human health in the indigenous system of medicine and modern pharmaceuticals worldwide [5]. Antimicrobial peptides have received great attention in the recent past due to their strong killing effect on microbes. An enormous number of medicinal plants have been known as leading source of antimicrobial compounds. Plant antimicrobial peptides (PAMPs) are one of these compounds. PAMPs can be used or altered to evolve new antibiotics, especially against multidrug-resistant (MDR) infections that are currently difficult to treat, by hindering MDR pump. PAMPs kill microorganisms using multifarious actions that include interference with the synthesis of DNA, RNA, protein and membrane permeabilization [6]. PAMPs are small, cysteine-rich proteins with antimicrobial activity comprising of 10-50 amino acids, positively charged and a molecular weight ranging between 2 to 9kDa [6-7]. PAMPs are broadly classified into six main families based on the number of cysteines and disulfide bonds: Thionins, Defensins, Hainins, Lipid transfer protein, Cyclotides and Snakins [8]. However, protein molecules more than 9kDa were also reported to have antimicrobial property [9-11]. During the course of evolution, it had been observed that human pathogenic bacteria had been able to develop resistance against human antimicrobial peptides [12, 13]. Plant can act as better alternative source of isolating antimicrobial peptides other than human because plant antimicrobial peptides have rare chance of contact with human pathogen. Therefore, chances of acquiring resistance by the human pathogens against these PAMPs will be rare [10]. The plant diversity being vast, only 273 PAMPs were characterized and reported in the Phyt AMP database [14]. There lies a huge opportunity to explore many plants in the search of new AMPs.

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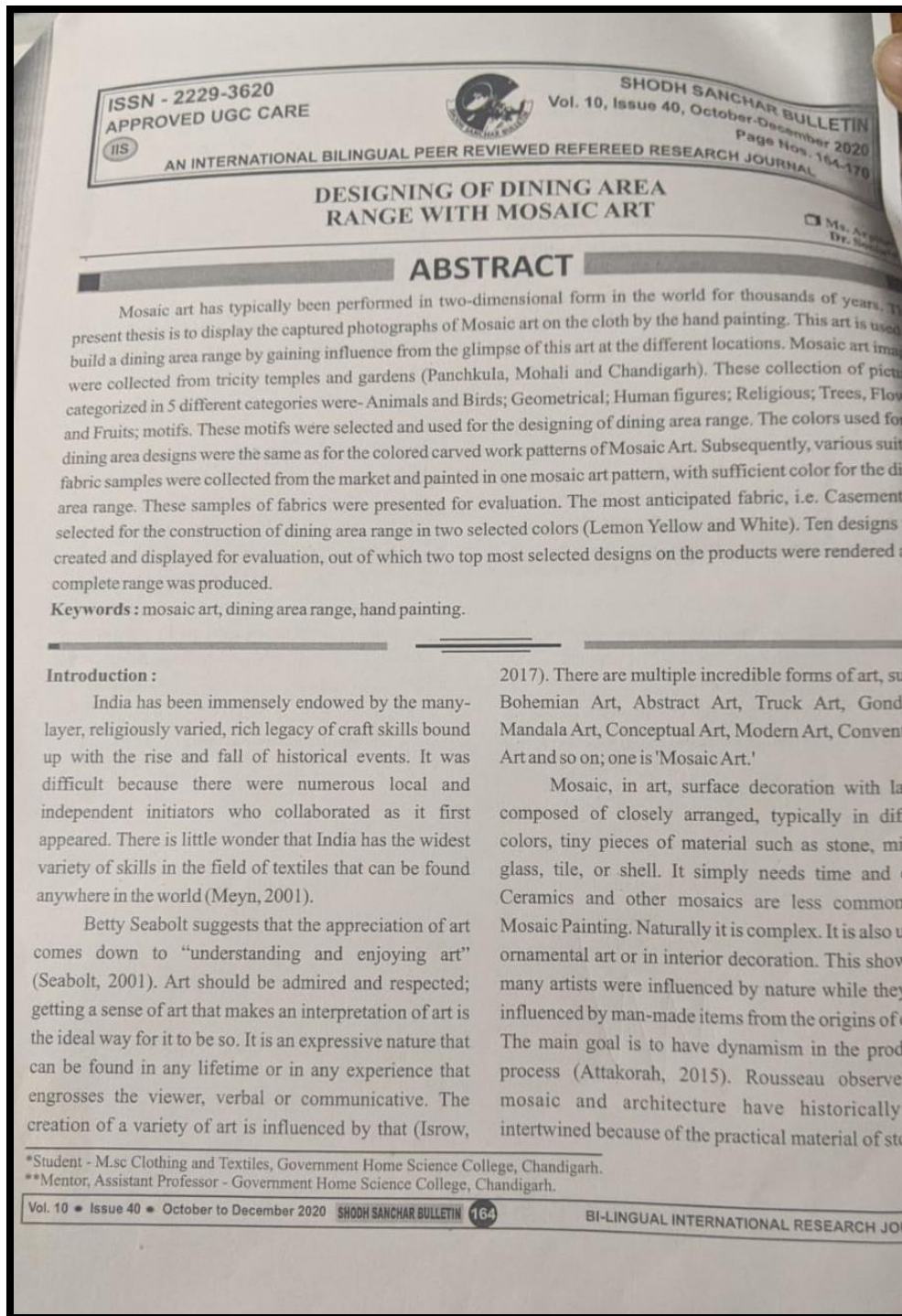
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## 45. Designing of Dining Area range with mosaic art



## 46. Footwear problems among adult Panjabi women of Chandigarh

## FOOTWEAR PROBLEMS AMONG ADULT PUNJABI WOMEN OF CHANDIGARH

Dr. Sonia\*

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**Abstract:** Women need suitable and comfortable footwear according to the role they have to play both at home and their work place. Not only clothing but footwear also plays a significant role in women's life for every occasion. As the large number of women is involved in outdoor activities, they are becoming more conscious about their health and fitness. Hence, they need properly fitted or little loose footwear as their choice. The city of Chandigarh has a large number of working women. The present study is undertaken to find the preference of fit of footwear and footwear problems among adult Punjabi women of Chandigarh. A total of 600 women form the sample of this study. The results thus shows that adult Punjabi women of Chandigarh, i) mostly prefer exactly fitted footwear ii) 55.2% women reported foot problems mainly heel pain.

**Keywords:** Fit of footwear, Footwear problems, Punjabi women

### 1. Introduction

To facilitate the foot its function, humans clad the foot in a variety of coverings (footwear) to give protection and warmth (Hawes and Sovak 1994). Properly constructed footwear improves compatibility between foot and footwear, thus contributing to fit and comfort (Kouchi 1995; Rossi 1988; Hawes et al. 1994). It helps us keep balance. It is not only essential for support and locomotion, it also easily influences lifestyle. "The foot is a part of the human body, and footwear can be studied as the clothed foot just like fashion is treated as a clothed body" (Kawamura 2016). Ill-fitting footwear may lead to biomechanical imbalance and ultimately give rise to different foot problems such as blisters, corns, and ankle injury, acute or chronic pain in the foot (Killian, Nishimoto, and Page 1998). Tight fitting shoes and high heels is often the cause of foot problems in women like hammer toes, blisters, bunions, corns, and calluses. Proper designing of footwear is of great importance for proper fit and comfort of foot within the shoe to avoid foot discomfort and deformity. The medial longitudinal arch of the foot helps to protect the foot from injury (Xiong et al. 2010).

A higher percentage of women in urban area, like Chandigarh, are becoming more and more involved in activities outside the home; and thus majority of times they remain in shoes. As the population of women involved in outdoor activities is rising, they are becoming conscious about their health and fitness. Hence, they need footwear that is suitable and comfortable for various occasions. If the footwear is not of right size or fit it leads to body fatigue, locomotion and foot problems. The present study is aim to find the preference of fit of footwear and problems related to footwear practices among adult Punjabi women of Chandigarh.



## 47. Preference of footwear design among adult Panjabi Women of Chandigarh

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**PREFERENCE OF FOOTWEAR DESIGN AMONG ADULT PUNJABI WOMEN OF CHANDIGARH**

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**Abstract:** Footwear forms an important part of women's ensemble. It plays a significant role in women's life for every occasion. As the population of women involved in outdoor activities is rising, they are becoming conscious about their health and fitness. Hence, they need footwear that is suitable and comfortable for various occasions. The city of Chandigarh has a large number of working women and adult student population. The present study is undertaken to find the preference of footwear design among adult Panjabi women of Chandigarh. A total of 600 female subjects divided into four age groups form the sample of this study. The results thus shows that adult Panjabi women of Chandigarh, i) equally prefer all the designs ii) season and comfort factors are given priority and, iii) also prefer front open and back open footwear designs with daily wear, office as well as formal wear.

**Keywords:** Footwear designs, Panjabi women

**1. Introduction**

A woman's wardrobe is incomplete without a few pair of footwear and forms the overall fashion look of a person. When it comes to footwear, women have many more choices than men. The different types of footwear are shoes, sandals, boot, clogs, slippers, oxfords, and sports shoes; along with various type of heels. Women love the footwear of any make and style across the world. The choice of the footwear reveals the women's taste, liking, and personality. Different types and styles of footwear are designed according to the kind of wear like daily wear, sports wear, office wear and formal wear. Taiwanese unmarried women aged 18-35 years spends more on purchasing shoes and lay more emphasis on style and colour as compared to married women aged 36 years and above were also concerned with comfort and material (Wang 2014).

College going girls of Chandigarh preferred fashion (Marwaha 1977; Kaar 2010), and design in footwear above all other factors while boys laid greater emphasis on the durability and comfort of the footwear (Marwaha 1977). Young adults' footwear practices have also been studied by Jain and Sharma (2015) in Jaipur where preference for comfort, size and fit was noted. Banerjee, Bagchi, and Mehta (2014) found that women and men of Kolkata and Delhi in addition to the factors of quality, durability, availability, fashion, appearance, also preferred 'odourless' footwear. Wadhwa (1981) observed that young girls of Chandigarh are fond of having large number of footwear pairs in their wardrobe than housewives. Appearance is the main factor influencing the girls' choice of footwear while housewives go for durability in the selecting footwear.

Women, who are on their toes throughout the day, know to a great extent that one of the most important items in their wardrobe is their footwear after the clothes that they wear. The present study aim to find the preference of footwear selection, factors influencing its selection and

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## 48. Effect of age on foot shape among adult panjabi women



## 49. Emotional maturity and resilience as predictors of psychological wellbeing among adolescents of working & Non-working mothers

EMOTIONAL MATURITY AND RESILIENCE AS PREDICTORS OF  
PSYCHOLOGICAL WELL-BEING AMONG ADOLESCENTS  
OF WORKING AND NON-WORKING MOTHERS

Monika\*  
Dr. Neha Sharma\*\*  
Dr. Komal Rai\*\*\*

ABSTRACT

Psychological well-being is an important aspect of human functioning often described as the combination of feeling good and to be able to function effectively. The present study was undertaken to assess the level of psychological well-being among adolescents and to study the emotional maturity and resilience as predictors of psychological well-being among adolescents of working and non-working mothers. Emotional Maturity Scale, Resilience Scale and Psychological Well-being Scale were administered on 520 adolescents (260 Boys and 260 Girls, 13-18 years of age) of working and non-working mothers. The results highlighted that majority of adolescents were found to possess moderate levels of psychological well-being and resilience while emotional maturity was recorded at unstable levels by majority of the respondents. Adolescents of working and non-working mothers reported significant differences in their total psychological well-being and its dimensions of satisfaction with life and efficiency which was found to be better in adolescents of non-working mothers. Insignificant differences were reported among adolescents of working and non-working mothers on emotional maturity and resilience. Findings revealed that psychological well-being showed significant negative correlation with emotional immaturity and significant positive correlation with resilience. Emotional maturity and resilience among adolescents has a positive role to play in enhancing the psychological well-being.

**Keywords :** Psychological well-being, emotional maturity, resilience, adolescents, working and non-working mothers

INTRODUCTION

Psychological well-being is an important aspect of human functioning which is described as the combination of feeling good and to be able to function effectively (Huppert, 2009). Many stress factors, physical as well as psychological are at work during adolescence to have an impact on psychological well-being.

The adolescents who show strength in different areas as life satisfaction, positive affect and positive life experiences are in a state of good psychological well-being while adolescents with low psychological well-being have been shown to possess lower levels of happiness, satisfaction, and self-esteem but high levels of

distress (Flouri & Buchanan, 2003). Moreover they are found to view social problems more seriously than others (Wilkinson, 2004). Thus a lower psychological well-being is found to have a negative influence on happiness and satisfaction.

Adolescence as a period of one's life poses many challenges for these young people who require adjustment to many changes in the self and the social relations in the outside world, family and peer group. Heightened emotionality and identity crisis makes these adolescents more prone to many psychological as well as environmental pressures (Rosenblum & Lewis, 2008). Considering this stage as a crucial stage of emotionality, it

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50. Review of the analytical methods for and clinical impact of additives and flavors used in electronic cigarettes.

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## Review of the Analytical Methods for and Clinical Impact of Additives and Flavors Used in Electronic Cigarettes

[Vasudha Bansal](#), [Beshare Hashemi](#), [Nadeem Raza](#), [Ki-Hyun Kim](#) , [Waseem Raza](#), [Pawan Kumar](#) & [Richard J. C. Brown](#)

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### Abstract

Electronic cigarettes (ECs) have recently become very popular among the population due to the various flavors available for vaping products. Consequently, manufacturers are trying to attract more users through the addition of various additives including nicotine, new flavors, and aromas. However, the inhalation of unknown and untested chemicals may cause health problems. Therefore, more clinical reports need to be collected for standardization of ECs for their effective regulation. However, detailed compositional information for EC additives is not commonly available. The aim of this review is, therefore, to study the state-of-the-art methods that can be employed for the quantitative analysis of the composition of electronic cigarettes with respect to these additives and flavors along with the basic cigarette ingredient like nicotine (both before and after consumption). In addition, efforts have also been made to address the clinical impacts of vaping EC and its additives on both the organ and cellular level. It was found that the effect of flavorings in EC is clearly associated with pathogenicity at the molecular level and need of standardization of the usage of EC and its flavorings is urgently needed.

**51. Atmospheric cold plasma (ACP) treatment improved in-package shelf-life of strawberry fruit**

**Link:** <https://link.springer.com/article/10.1007/s13197-019-04035-7>

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## Atmospheric cold plasma (ACP) treatment improved in-package shelf-life of strawberry fruit

Sudha Rana, Deepak Mehta, Vasudha Bansal , U. S. Shivhare & Sudesh Kumar Yadav 

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### Abstract

The aim of this study was to investigate the effect of atmospheric cold plasma (ACP) treatment on the microbial inactivation, physicochemical properties, and shelf-life of strawberry fruit with its extended in-package storage at room (25 °C) and refrigerated (4 °C) temperature. ACP treatment of 10, 15 and 30 min was studied on strawberry fruit using a dielectric barrier discharge (DBD) at 60 kV with an input voltage of 260 V at 50 Hz. The shelf-life of ACP treated strawberry was extended to 5 days at 25 °C and 9 days at 4 °C in sealed ACP package. However, non-treated packaged strawberry was degraded in 2 days. ACP treatment of 15 min resulted in 2 log reduction of microbial load and enhanced the concentration of chlorogenic acid, hyprin, phloretin, vanillin, gallic acid, 4-hydroxybenzaldehyde and rutin during in-package storage of 5 day (~ 120 h) at 25 °C with respect to control ( $p < 0.05$ ). In addition, ACP treatment of 15 min at 60 kV was also found to increase the total phenolic content and antioxidant activity. However, total soluble solids, pH and moisture were not affected with ACP treatment ( $p > 0.05$ ). Therefore, ACP treatment of 15 min with in-package storage of 5 days (~ 120 h) was found to be advantageous for increasing the shelf-life and functional quality of strawberry fruit.

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## 52. Anti-viral (Anti-Flu), Anti Bacterial, Immunoboosting Oral Composition of Herbal Extracts for treating Respiratory Infections-A Case Study.

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**ANTI-VIRAL (ANTI-FLU), ANTI-BACTERIAL IMMUNOBOOSTING ORAL COMPOSITION OF HERBAL EXTRACTS FOR TREATING RESPIRATORY INFECTIONS – A CASE STUDY**

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**ABSTRACT**  
 Few antiviral and a large number of antibacterial synthetic drugs are approved worldwide for treatment of respiratory infections caused by viruses and bacteria. Though the antiviral, antibacterial and immunoboosting properties of several herbs are well-documented, not a single standardized, herbal composition is approved globally for treatment of viral or bacterial respiratory infections. The present case discloses clinical results of a unique, standardized herbal extract formulation for treatment of respiratory tract infections, which offers potential for therapeutic and prophylactic use at global level, especially in epidemics. The formulation is a synergistic composition of alcoholic extracts of seven herbs viz. *C. longa* (95% Curcumin) 26-31%, *B. serrata* (65% Barbalic acid) - 22-27%, *M. pterocarpone* - 18-23%, *O. sanctum* - 7-12%, *T. cordifolia* - 7-12%, *W. somnifera* - 5-7%, *P. nigra* (95% Piperine) - 1-2%. Presentation of the composition is in form of capsules of 700 mg each for oral intake (Patient filed- Indian patent no. 202011016778 dt. 19/04/2020; International PCT Application No. PCT/IN2020/050448 dt. 19/5/2020) The composition was evaluated for therapeutic efficacy in six patients in age group of 15-57 years who were clinically diagnosed as suffering from viral infection (flu) or mixed respiratory infections caused by viruses and bacteria. Diagnosis and treatment was carried out by a Practising Ayurvedic Physician at Ayusham Health Care, an Ayurvedic Clinic based at Plot No 293, Industrial area, Phase-1, Panchkula, Haryana, India. When given orally to the patients at a dose of 2 capsules of 700 mg each, thrice a day (4.2 gm/day), the composition was very effective in rendering all patients asymptomatic within 2-3 days. Treatment was however continued for 7 days to ensure complete recovery and prevent relapse. No side-effects were observed in any of the patients. The present case study suggests that the powerful antiviral, antibacterial, anti-inflammatory, immunomodulator activity of the composition is due to the synergistic effect of 50-60 powerful phytochemicals which act on the biologically active components. The composition offers an affordable and effective treatment for upper respiratory tract infections (common cold, sore throat etc.) caused due to viral infections (flu) or mixed viral and bacterial infections. Possibilities of effectiveness of the composition needs to be explored against novel viruses causing epidemics such as 'Severe Acute Respiratory Syndrome (SARS)', 'Middle East respiratory syndrome (MERS)' and COVID-19.

**KEYWORDS:** anti-virus, antibacterial, herbal composition, respiratory infection, flu.

**INTRODUCTION**  
 Common Cold and Flu are the two most common respiratory diseases caused by viruses. In addition to viruses, bacteria also cause infections of the respiratory tract, making diagnosis and treatment of these respiratory infections tough and at times expensive. Immuno-compromised individuals, suffering from HIV or cancer undergoing chemotherapy/radiotherapy, patients who have undergone organ transplant and are on immunosuppressant drugs, are more prone to viral and bacterial infections. Livestock like poultry, pigs, sheep, goat, etc. reared for meat are also prone to respiratory infections in which the infection can travel to humans and lead to mass spread i.e. epidemic and pandemic. Common Cold and Flu infect millions of people worldwide, every year. Because cold and flu share many similar symptoms, it can be difficult (or even impossible)

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## 53. Effectiveness of Amulya Amritatuls Rasayan and Amulya Energy Z capsules in Treating Typhoid: A Case Study

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**EFFECTIVENESS OF AMULYA AMRITATULSI RASAYAN AND AMULYA ENERGY Z CAPSULES IN TREATING TYPHOID: A CASE STUDY**

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**ABSTRACT**  
 Amulya Amritatulasi Rasayan- containing extracts of just two plants - Tulsi (*Ocimum sanctum*) and Geloye (*Timospora cordifolia*) is a proprietary anti-infective herbal (Ayurvedic) formulation being manufactured by Amulya Herbs Pvt. Limited, Panchkula (India). In combination with Amulya Energy Z capsules, the formulation is found to be highly effective in the treatment of typhoid. Amulya Energy Z capsules are a dietary supplement containing Ashwagandha (*Withania somnifera*), Safed Musli (*Chlorophytum borivilianum*), vitamins and minerals. Tulsi is considered as one of the holiest and most healthiness giving herbs in India. Geloye, Ashwagandha and Safed Musli the other three herbs used in formulation are available in India and known for medicinal use since ancient times. These plants are used in Ayurvedic system of medicine for total rejuvenation, immunomodulation, antibacterial activity and as antioxidants. Since ages the therapeutic uses of these plants are considered as safe, inexpensive and efficient. They heal many diseases due to chemical constituents present in different parts of plants. Antibacterial activity of chemical constituents of Geloye, Tulsi, Ashwagandha and Safed Musli against *Salmonella* is well documented. Thirty 'Widal test positive' Typhoid Patients, who were given 400mg Cefixime 180 and paracetamol 500mg SOS by allopathic doctor for 15 days with no sign of recovery were successfully treated in Aayusham Health Care, Plot No 293, Industrial area, Phase-1, Panchkula, Haryana, India, using Amulya Amritatulasi Rasayan capsule 500mg, containing 50:50 combination of *Ocimum sanctum* and *Timospora cordifolia*, twice a day for thirty days, along with Amulya Energy Z capsules 500mg, containing herbal extracts of Ashwagandha (*Withania somnifera*) 300mg, Safed Musli (*Chlorophytum borivilianum*)100mg, vitamins and minerals once a day for 30 days. The present case study suggests that the biologically active components of Tulsi and Geloye in combination with Ashwagandha and Safed Musli had synergistic activity against *Salmonella typhi* and show promise as an alternative cheap non-antibiotic combination for the effective treatment of for *S. typhi* infection.

**KEYWORDS:** Ayurveda, Typhoid, *Ocimum sanctum*, *Timospora cordifolia*, *Withania somnifera*, *Chlorophytum borivilianum*.

**INTRODUCTION**  
 Typhoid fever, caused by *Salmonella typhi* (*S. typhi*), is an infectious disease and causes morbidity and mortality throughout the world.<sup>[1]</sup> The rapid emergence of multi drug resistant (MDR) *S. typhi* is a major health concern. *Salmonella typhi* showing resistance to ampicillin, chloramphenicol, trimethoprim-sulfamethoxazole and fluoroquinolones, created therapeutic problem.<sup>[2]</sup> Therapeutic agents capable of modulating the host immune responses in order to control the pathogen and introduction of new treatment regimen. Traditional medical practice has been known in many parts of the world.<sup>[3-5]</sup> Tulsi (*Ocimum sanctum* Linn. Lamiaceae) is a sacred plant of Hindu religion worshipped all over the India. Tulsi means 'incomparable one' or 'matchless one' and is derived from Sanskrit.<sup>[6]</sup> Different parts of


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## 54. Current Scenario of Breastfeeding In India

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## Current Scenario of Breastfeeding in India

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**Abstract-** Breastfeeding is an unparalleled universally recommended intervention for the promotion of health and nutrition of children and reduction of mortality. In spite of the WHO recommendations and baby-friendly hospital initiative, breastfeeding practices are inappropriate due to maternal, infant, socioeconomic, and cultural factors. WHO recommends the use of various Infant and Young Child (IYC) indicators for assessing infant and young child feeding practices. Unlike in 2008, no distinction is made between core and optional indicators in this set of recommendations (2021). To support programme assessment, planning and monitoring, national-level reporting on estimates for IYCF indicators should take place approximately every three to five years. NFHS-5 findings show a worrying trend in child feeding practices. Despite the importance of breastfeeding practices for the healthy growth and development of infants and young children and health of mothers, data is not so encouraging. Necessary action is therefore the need of the hour. Breastfeeding is not only a mother's responsibility. To enable all mothers and children to be breastfed, it requires support from governments, healthcare systems, families, communities, employers and work places to actually make it work. We need to leverage all sectors of society to make breastfeeding successful for mothers and babies. Appropriate individual and group counseling for families and community is required. Adequate funding and implementation of policies and programmes is also necessary.

**Keywords-** Breastfeeding, baby-friendly hospital initiative, Infant and Young Child (IYC), Community.

### I. INTRODUCTION

The right to food and nutrition, including Breast milk is well- established in International Human Rights principles and Laws. Right to life includes the child's right to breastfeed, to obtain adequate nutrition and attain highest standard of health and women's right to breastfeeding education and to be paid with maternity leave.

Women have the right to obtain accurate and unbiased information needed to make an informed choice about breastfeeding. They also have the right to good quality health services, including comprehensive sexual, reproductive, and maternal health services. [1]

growth, health, and behavioral development for infants and young children (IYC) under 2 years of age.

To support programmatic action and to contribute to monitoring progress on IYCH at National and Global levels, indicators for assessing IYCF practices were introduced. The current recommended set of indicators (2021) is population-level indicators and has been designed for data collection in large-scale surveys or by national programs whereas small local and regional programs may also be able to make use of them.

These cannot be applied for screening or assessment of individuals and are not intended to meet the needs in program monitoring and evaluation. Unlike in 2008, there

### 55. Optimizing Breastfeeding for better health Outcomes: A way forward

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## Optimizing Breastfeeding for Better Health Outcomes: The Way Forward

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### ABSTRACT

Breastfeeding is the clinical gold standard for infant feeding and nutrition, with breast milk uniquely tailored to meet the health needs of a growing baby. However, breastfeeding seems to be under attack by the commercial influence of the baby food industry, supported at work places and in the hospitals where they come to deliver. Artificial baby milk (formula) cannot meet the gold standards of breast milk. Provisions of IMS Act exists but widespread awareness and effective enforcement is required. Various studies reveal the gaps in the provision and implementation of the laws and awareness programs and to suggest appropriate solutions. It, thus, becomes necessary to emphasize upon the provisions of IMS Act, 2003 and evidently bring forward the commercial influence of baby food industry. Review revealed that the provisions of IMS Act has been violated at various online and offline platforms. Strategies to optimise breastfeeding and overcome breastfeeding barriers in the country are recommended, including community health and education programmes and 'baby-friendly' hospital initiatives. Advocates of breastfeeding are needed at the national, community and family levels. In addition, more systematic research should be conducted to examine breastfeeding practices and the best strategies to promote breastfeeding in this country.

**KEYWORDS:** Breastfeeding, Breastmilk, Artificial baby milk, IMS Act, Baby friendly hospital initiatives

### INTRODUCTION

Human milk, or breastmilk, is uniquely engineered for human infants and is the biologically 'natural' way to feed infants. Breastfeeding is the cornerstone of infant and young child survival, nutrition, development and maternal health. WHO recommends

bioactive components—those that have an effect on cells and tissues—and how these components contribute to development and protect against disease.

Among the bioactive components of breast milk is *Lactoferrin*. It has been the focus of a number of

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## DESIGNING OF HAND BAGS FOR COLLEGE GOING GIRLS

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### ABSTRACT

Clothing is one of the three basic necessities of men or women and is incomplete without accessory. Accessories give clothes a more meaningful look and add prestige to an ensemble. There are a lot of accessories which are generally used by women such as belts, gloves, watches, stoles, scarves, bags and wallets etc. Clothing is determinant of personality and handbags form a part of it. Now a day's women are becoming more and more involved in activities outside the home, so they need a multipurpose bag in which they can keep keys money, mobile, water bottle, lunch box and other important things. The size of handbag depends upon individual 's preference about what she wants to carry in it. Today, tote bags play many roles and meet many needs. Tote bags are handbags which are multi-tasked, and also popular all over the world. A tasteful sense in clothing with minimal accessories can give the piquant touch. The younger generation is much interested and more experimental to their clothing, especially girls. Innovative design, usefulness combined with in trend styles is the most sought after properties in a consumer good. For creating the tote bags, truck art is studied, motifs are collected, and then designs are developed inspired from truck art.

**Keywords:** accessories, hand bags, tote bags, truck art

### INTRODUCTION

Accessories are items of equipment that are not usually essential, but which can be used with or added to something else in order to make it more efficient, useful, or decorative. Handbag is one of the most important items for a woman and contributes much to her personality without which a woman rarely leaves her home (Danville, 1962). According to Longman and Oxford English dictionary, —Handbag is a small bag or pouch of any flexible material used by a woman to carry necessities. The handbag is an essential element of a woman's wardrobe that is both functional and fashionable. Basically, handbags are bigger in size than purses. A handbag is a true companion as it not only holds one 's essentials while running out, but also tells others just how well put together a person is. A girl can triple the impact of her outfit with just choice of handbag extending from the hand (Bawa, 2006).

Today more and more women are becoming educated and socially alert. They are usually playing an active role, at domestic as well as the career front. Therefore, for multifarious jobs, they require accessories which will give clothes a more expensive look. In a well-coordinated wardrobe very few accessories are required and it should be good collection that individual carry often and keeping with contemporary trends and style.

The handbags can be classified according to need, material, and decoration. According to type, there are various types of bags such as laptop bag, bottle bag, promotional bag, shopping bag, and utility bag (Lau, 2012). The size of handbag depends upon individual 's preference about what she wants to carry in it. Today, tote bags play many roles and meet many needs. A tote bag is described as a large or roomy handbag (usually slung over the shoulders) to carry everyday items

**ANTIBACTERIAL EFFICIENCY OF NATURAL DYE EXTRACTED FROM  
EUCALYPTUS BARK ON COTTON FABRIC**

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**ABSTRACT**

India has rich diversity in terms of its plant kingdom which is a treasure house of diverse natural resources. Dye is one of the natural products which can be extracted from different herbage. Natural dyes are sustainable as they are renewable and bio-degradable. With the emergence of multi-drug-resistant organism, combining medicinal plant with synthetic medicines against resistant bacteria becomes necessary. In the present study natural dye was extracted using aqueous method from the bark of *Eucalyptus globules* and applied on cotton fabric. Its antibacterial activity was tested against major clinical pathogens i.e. *S. aureus*, *E. coli*, *P. fluorescens* and *B. cereus* at different concentration and with different mordanted and dyed samples. During the test zone of inhibition was measured and it was found that dyes extracted from Eucalyptus bark has good antibacterial efficiency which further increased with the addition of Alum and  $FeSO_4$  mordants.

**KEY WORDS: Eucalyptus bark, Antibacterial efficiency, mordants.****INTRODUCTION**

Natural dyes are experiencing a great resurgence of interest in the textile world. They are considered eco-friendly and nontoxic, fitting nicely into similar trends of repurposing and up cycling. We are now becoming more aware of the ill effects of synthetic dyes on our environment.

The wide use of antibiotics in the treatment of bacterial infections has led to the appearance of resistant strains. The increase of this phenomenon threatens public health on a global scale as it reduces the effectiveness of treatments and increases morbidity, mortality and health care costs. As a result, the need for new antimicrobial agents becomes greater than ever. With the

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## Fluorine-containing 2,3-diaryl quinolines as potent inhibitors of methicillin and vancomycin-resistant *Staphylococcus aureus*: Synthesis, antibacterial activity and molecular docking studies

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**ABSTRACT**

Drug resistant bacteria pose a major health concern and affect a large section of global population. Antibacterial drug discovery has stagnated owing to multiple factors including unattractive returns for major pharmaceutical companies. Thus, discovery of effective antibacterial drugs against drug-resistant bacteria is an urgent unmet need affecting healthcare systems globally. In this study, fluorine-containing 2,3-diarylquinolines (**4a-1**) and non-fluorinated analog **4m** were synthesized utilizing environmentally benign chemistry of arenediazonium salts and arynes for regioselective installation of aryl groups at C-2 and C-3 positions, respectively. *In vitro* antibacterial evaluation against various Gram-negative and Gram-positive bacteria revealed inhibitory activity of majority of these compounds against Gram-positive *S. aureus* ATCC 29213. Compounds **4e**, **4i**, **4j** and **4l** were most potent inhibitors with MIC values of 10.95–24.0 µM. None of the compounds inhibited Gram-negative bacteria. **4e**, **4i** and **4l** also displayed low levels of cytotoxicity against Vero cells, therefore, offering high safety profiles. Importantly, **4e**, **4i** and **4l** exhibited equipotent inhibition of Methicillin and Vancomycin-resistant *S. aureus*, rendering them potential hits for further development. Molecular docking studies with topoisomerase II DNA gyrase demonstrated significant interactions of these inhibitors with target protein, which provided valuable insights into their potent antibacterial activity.

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### 1. Introduction

In recent years, frequent and widespread emergence of multidrug resistance (MDR) in deadly infectious diseases has posed challenges to mankind. The drug resistance in the bacterial infections have raised severe health concerns.[1–4] The commonly used antibiotics for treatment of bacterial infections are being increasingly rendered ineffective. World Health Organization (WHO) reports reckon the antimicrobial resistance (AMR) as one of the biggest threats to global health and economy [1,5,6]. Each year

MDR bacteria kill ~25,000 in Europe, ~35,000 in the U.S., and estimated 58,000 people in India, respectively [7,8]. The severity of the matter also lies in the fact that several medical practices such as chemotherapy, surgeries and organ transplantations etc. that rely on the antibiotics for management of the post-treatment bacterial infections, are also at risk due to AMR [6]. The looming threat of AMR in bacterial infections demands new and effective tools and strategies to prevent and treat MDR bacterial infections. The rapid development of small-molecule based antibacterial agents offers an effective strategy to combat the re-merging resistance to existing drugs and antibiotics.

Among a variety of medicinally important heterocyclic compounds, quinoline occupies a significant position in pharmaceuticals. This privileged scaffold is a versatile pharmacophore with a broad range of therapeutic efficacy [9,10]. Several

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## 59. Fighting against Severe Acute Respiratory Syndrome: A Systematic Review on Plant Foods and Natural Products as Complementary Herbal Medicines.

Link: <https://www.sysrevpharm.org/articles/effect-of-risks-on-elderly-employment-of-entrepreneurs-mediating-role-of-human-capital-in-thailand.pdf>

## Fighting against Severe Acute Respiratory Syndrome: A Systematic Review on Plant Foods and Natural Products as Complementary Herbal Medicines

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### ABSTRACT

The corona pandemic 2019 (CoVID-19) has encouraged social movement for the physical distancing and awareness for the use of natural products of medicinal plants for home remedies. Scientists are working to unravel the genetic makeup of corona virus i.e., the causative agent of CoVID-19 in order to find treatments for the infection. Until now, even medicine and vaccine have been formulated in order to help cure the disease. The primary objective of this article is to identify and analyse the published articles in the areas of complementary herbal plant application for antiviral and anti-inflammatory properties, ways to enhanced immunity, and to cure infectious symptoms. One of the paramount options including the use of herb-based medicinal derivatives have been proposed to cure infections with the positive outcome. Most of the established traditional medicinal systems like Traditional Chinese medicine and Ayurveda have recommended a list of several potent herbal and essential oils that ease the symptoms of infections by their regular massaging on the scalp. These results can serve as a yard stick for the efficacious utilisation of food plants as home remedy and for the development of clinical study on disease prevention from natural resources in a global context.

**Keywords:** Chemometric, CoVID-19, flu-like symptoms, medicinal plants, MERS

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### INTRODUCTION

Viral respiratory infection can be classified by causative agents, for instance, common cold was caused by either influenza viruses (Type A, and B) or coronaviruses (Al-Tawfiq et al. 2013; Faisey et al. 2002).  $\beta$ -coronaviruses are also the major causes of the Severe Acute Respiratory Syndrome (SARS-CoV) and Middle East Respiratory Syndrome Corona virus (MERS-CoV), the epidemic outbreaks in 2003 and 2012, respectively (Chang et al. 2020; Desforges et al. 2020; Evelyne et al. 2020). The rhino-influenza and coronaviruses cause acute respiratory multi-organ dysfunction with lung inflammatory lesions and structural damage, and acute respiratory distress syndrome (ARDS) which lead to pulmonary failure and result in patient fatality (Adnan et al. 2020; Chen et al. 2020). World Health Organization (WHO) recommended regular washing of hands, masking of nose and mouth while sneezing and coughing, thorough cooking of food and maintain social distancing

from individuals who are symptomatic for respiratory infections. The new strain of corona virus came to existence in December 2019 which was later spread out globally with increasing number of deaths and hospitalizations in no time. The viruses were officially renamed SARS-CoV-2 by the International Committee on Taxonomy of Viruses (ICTV), which later known as coronavirus disease 2019 (or CoVID-19) (Lupia et al. 2019). The symptoms of infection started appearing after an incubation period of ~ 6 days. The most common symptoms at onset of CoVID-19 illness are fever, cough, and fatigue. Meanwhile, patients could also develop sinus infection, sputum production, headache, hemoptysis, dyspnoea, and lymphopenia (Ren et al. 2020; Wang et al. 2020) (Figure 1). To date (as of November 2020), increasing numbers of cases and deaths from CoVID-19 are still being reported globally with consistent increase in numbers (WHO 2020).

## 60. Development Of Gluten Free Snacks Using Chickpea Flour And Flax Seeds For Celiac Patients

Link: <https://www.jetir.org/papers/JETIR2110326.pdf>



## **DEVELOPMENT OF GLUTEN FREE SNACKS USING CHICKPEA FLOUR AND FLAX SEEDS FOR CELIAC PATIENTS**

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### **ABSTRACT**

**Introduction:** The study was designed to develop gluten free snacks using chickpea flour and flax seeds for the patients diagnosed with celiac disease. Celiac disease is said to be an autoimmune disease that's occurred when gluten containing food sources like wheat, semolina, etc. are eaten in the diet and leads to the damage in the small intestine limiting absorption of nutrients particularly iron, folate, vitamin-D and calcium causing serious medical complications. To avoid such indigestion caused among the celiac patients one must follow up gluten-free products in the diet.

**Objective:** The objective of this present research work was keeping in the view the problems associated with commercial gluten free products and was explored to develop gluten-free snacks for with following objectives: To develop an acceptable product by choosing an effective alternative of wheat flour, to develop the cost effective product with easy feasibility of ingredients and to assess the nutritional profile of the developed product using biochemical analysis.

**Materials and Method:** Research papers were studied related to the benefits of the chickpea flour, flax seeds and the ingredients used in the study and reviewed the findings of each article. Three products namely gluten free Ladoos (sweet spherical snack), Mathis (fried salted snack) and kachoris (stuffed salted meal replacer) with 3 samples each with different standardized compositions were taken i.e. (a) Sample 1 (chickpea flour-50% and Flax-10%) (b) Sample 2 (chickpea flour-55% and Flax-5%) (c) Sample 3 (Chickpea flour-60%

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**61. Effect of Demographic and socio economic parameters on prevalence of anemia amongst pregnant women in Chandigarh**

**Link:** [https://www.researchgate.net/publication/353480087\\_EFFECT\\_OF\\_DEMOGRAPHIC\\_AND\\_SOCIO\\_ECONOMIC\\_PARAMETERS\\_ON\\_PREVALENCE\\_OF\\_ANEMIA\\_AMONGST\\_PREGNANT\\_WOMEN\\_IN\\_CHANDIGARH](https://www.researchgate.net/publication/353480087_EFFECT_OF_DEMOGRAPHIC_AND_SOCIO_ECONOMIC_PARAMETERS_ON_PREVALENCE_OF_ANEMIA_AMONGST_PREGNANT_WOMEN_IN_CHANDIGARH)

**EFFECT OF DEMOGRAPHIC AND SOCIO ECONOMIC PARAMETERS ON  
PREVALENCE OF ANEMIA AMONGST PREGNANT WOMEN IN CHANDIGARH**

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**G. Prerna** Assistant Professor, Lovely Professional University, Phagwara  
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**ABSTRACT**

Anemia is a severe public health problem in India affecting nearly 50% of the population especially vulnerable groups such as children, adolescent girls and pregnant women. Initiatives have been taken by the Government to help combat this problem, but to no avail. Vegetarian diets particularly provide lesser iron. The present study was conducted to assess the prevalence of anemia among one set of the vulnerable population i.e. pregnant women and further evaluate the effect of socio economic status and demographic factors on anemia. Pregnant women visiting the gynecology department of Civil Hospital in Chandigarh were selected for the study. It was observed that 50.4% women belonging to rural areas and 44.5% belonging to the urban parts of Chandigarh suffered from mild and moderate anemia. Furthermore, when assessed for prevalence depending upon the socio-economic status, a significant difference was observed amongst subjects belonging to the upper and lower class ( $p=0.03$ ). 48.9% women belonging to upper lower class suffered from moderate anemia, whereas only 18.6% belonging to upper middle and 0% belonging to upper class suffered from anemia. Being a public health problem, efforts must be made to harvest and consume low cost iron rich sources to help overcome this deficiency.

*Keywords: Iron Deficiency Anemia, vulnerable population, low cost iron rich, socio economic status, harvest*

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**INTRODUCTION**

Worldwide, at any given moment, more individuals have iron-deficiency anemia than any other health problem<sup>(1)</sup>. Anemia is the most common morbidity among micronutrients and affects health, education, economy, and productivity of the entire nation. Its prevalence is wide spread especially in vulnerable groups. It affects over 800 million women worldwide. In India, it is classified as a major public health problem as it is estimated that 52% of non-pregnant women of reproductive age are anemic. Anemia prevalence in young children continues to remain over 70% in most parts of India and Asia despite a policy being in place and a program that has been initiated for a long time<sup>(2)</sup>. The NFHS survey conducted in 2012-13 revealed that Anemia prevalence ranges from 76.3% in West Bengal to 32.7% in Kerala<sup>(3)</sup>. The most common among the causes for anemia is malnutrition and among that group, iron deficiency makes up the bulk of it. Causative factors for anemia ranges from low dietary intake to poor iron and folic acid intake<sup>(4)</sup>. Furthermore, walking bare feet, unhygienic habits and use of potable water not fit for drinking were amongst the important factors leading to anemia deficiency in masses<sup>(5,6)</sup>. However, low nutritional education and lower socio economic status can also lead to an increase in cases of anemia<sup>(7,8)</sup>. Several socio-demographic factors, may it be location, gender, ethnicity, income also affect the nutritional status<sup>(9)</sup>. Developing countries are said to face risk of anemia due to nutritional deficiency, blood loss and malaria<sup>(10)</sup>.

There are various types of Anemia majority of which can all be categorized under Nutritional Anemia. Deficiency of hemoglobin in the blood could be due to folic acid, iron or Vitamin B<sub>12</sub>, but the most common type prevalent is the iron deficiency Anemia. It is caused when there is less of the mineral iron in the body. Iron is required to bind with a protein globin to form hemoglobin. The common symptoms of iron deficiency Anemia include general weakness, fatigue, shortness of breath, lack of concentration and dizziness.

## 62. A study of transphobia in relation to stereotypes, and peer pressure among young adults

## A STUDY OF TRANSPHOBIA IN RELATION TO STEREOTYPES, AND PEER PRESSURE AMONG YOUNG ADULTS

Dr. Roshan Lal\*  
Ms. Shikha Garg\*\*

### ABSTRACT

The present study was conducted to gain an insight to study transphobia in relation to Stereotypes and Peer Pressure among young adults in Chandigarh. Transphobia is a range of opposing attitudes and feelings against transsexuality and transsexual or transgender people, based on their internal gender identity. However, it has been understudied whether there are significant differences in Transphobia, Stereotypes and Peer Pressure among young adults. Also, the study includes correlation of Transphobia with Stereotypes and Peer Pressure among young adults. The study was conducted on 300 young adults (150 males and 150 females) from Chandigarh. Statistical analysis using Descriptive statistics, t-test and Karl Pearson's Coefficient of correlation were used. The result revealed that there is a non-significant difference in transphobia among males and females. Transphobia is negatively correlated with warmth competent stereotypes whereas transphobia is positively correlated with peer pressure among young adults.

**Keywords :** Transphobia, Stereotypes, Peer Pressure, Young adults.

### INTRODUCTION

Sex is the biological and physical characteristics that label us as male or female. It is based on chromosomes or genitalia. Whereas, Gender is complicated as it is a combination of characteristics, expectations and, roles which usually linked with biological sex. (Beemyn & Rankin, 2001; Kony, 2010) Mainly gender identity is a central aspect of gender. There are some people who with the male body feel strongly feminine and some with female biology feel masculine (Richards et al, 2016). Transgender people are individuals of any age or sex whose appearance, personal behaviour, characteristics, emotions differ from stereotypes about how men and women are "supposed" to be. Transphobia is hatred, fear, mistrust, disbelief, negative attitude of people towards transgender and transsexuality. It includes all negative attitude towards people who do not integrate society's gender expectation. (Nagoshi et al, 2008) Sexism is the main roots of

transphobia and this is the reason that transgender is intolerant and discriminated against. This irrational behaviour of bullying, abuse, misunderstanding, stereotyping is trans prejudice towards androgynous people. Transphobia is a range of opposing attitudes and feelings against transsexuality and transsexual or transgender people, based on their internal gender identity. They experience victimization throughout their life which leads to anxiety, depression, suicidal ideation, aggression, violence, substance abuse, trauma etc. It is also marked by acts of violence.


Stereotypes are dangerous because they can cause us to be disoriented in our perceptions which leads to negative attitudes towards transgender or being transphobic. The connection between transphobia and stereotypes is an over-generalized belief about traditional gender roles which are taught to young adults which encouraged negative ideas and hatred. It is assumed that the strict belief in gender roles or gender leads to negative

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**A STUDY OF HELICOPTER PARENTING WITH HOME ENVIRONMENT,  
RESILIENCE, ANXIETY, PSYCHOLOGICAL WELL-BEING, ACHIEVEMENT  
VALUES AND ANXIETY AMONG ADOLESCENTS**  Shikha Garg\*

**ABSTRACT**

Helicopter parents are those parents who are overly involved in the life of their children, they always fly overhead, supervise every moment of their children's life persistently. However, it has been understudied whether there are significant differences in helicopter parenting, home environment, resilience, anxiety, psychological wellbeing, achievement values and anxiety among adolescents. Also, the study includes the correlation of helicopter parenting with the other selected variables. The study was conducted on 300 adolescents (150 males and 150 females) from Chandigarh. Standardized tools used namely Helicopter Parenting Scale (LeMoine, Terri, and Tom Buchanan 2011), Wellbeing Evaluation Scale (Bockmark, Goodwill, 2009), Home Environment Scale (Dr.(Smt.) Meenu Aggarwal, 1964), Brief Resilience Scale (Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J.; (2008), The Beck Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988), Achievement Values and Anxiety Inventory (Prayag Mehta, 1969) were used. Statistical analysis using descriptive statistics, t-test and Karl Pearson's Coefficient of correlation was done. Results revealed that there are non-significant differences in helicopter parenting among adolescent males and females. Home environment, resilience, anxiety, psychological wellbeing and achievement values among males and females were negatively correlated to helicopter parenting whereas the home environment and wellbeing among females were positively correlated with helicopter parenting.

**Keywords :** Helicopter Parenting, Home Environment, Resilience, Anxiety, Psychological Wellbeing, Achievement Values.

**INTRODUCTION**

Parenting is not just about a set of rules to follow a happy, well-adjusted life. Good parenting aims at socialising children. But it has been noticed that nowadays due to busy life-scheduled parents are unaware of what kind of parenting they should provide, they are unaware of the consequences of providing the right amount of love, kindness and caring. Helicopter parenting is the 1990's term which describes those parents who are overly involved in the life of their children. Generally, these parents hit their children in front of others, which will have a bad influence on them moreover their home environment is found to be poor because they do not have the allowance to choose their

decision on their own. Psychologists define resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress such as family and relationship problems, serious health problems, or workplace and financial stressors. Wellbeing is the experience of health, happiness and prosperity. It includes having good mental health, high life satisfaction, a sense of meaning or purpose and the ability to manage stress. Research showed that children with helicopter parents may be less able to deal with the challenging demands of growing up, especially with navigating the complex school environment. Achievement values are "the incentives or purposes that individuals have for succeeding on a given task".

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## **PREVALENCE OF HYPERTENSION AND ITS ASSOCIATED FACTORS AMONG AFFLUENT KHATRI BOYS AND GIRLS OF CHANDIGARH**

**BHAVNEET KAUR AND INDU TALWAR**

### **ABSTRACT**

The present study has been undertaken with an aim to investigate the prevalence of hypertension along with associated factors among affluent Khatri boys and girls of Chandigarh. A cross-sectional sample of 1827 (918 boys and 909 girls) Khatri boys and girls ranging in age from 6 to 17 years, belonging to high socio-economic status were drawn from various public and convent schools of Chandigarh. The data were divided into twelve age groups each of the magnitude of one year using Decimal age calendar. Height, weight, waist circumference, hip circumference, sub scapular skinfold thickness, triceps skinfold thickness of each subject was measured using standardized anthropometric techniques given by Weiner and Lourie (1981). Derived indices like body mass index, waist hip ratio, waist height ratio, conicity index, subscapular to triceps skinfold ratio, fat mass index and fat free mass index were computed from the anthropometric measurements. A body fat analyzer (Omron HBF 352 model) based on the bioelectrical impedance method was used to calculate total body fat mass and percentage fat among Khatri adolescents. The blood pressure was measured with a standard clinical sphygmomanometer. The mean value of systolic blood pressure in boys and girls at the age of 6 years was 97.07 mm Hg and 99.44 mmHg respectively and it increased to 130.56 mm Hg and 122.57mmHg at 17 years. Girls showed the maximum rise in blood pressure from 11 to 12 years (5.85mm) and boys between 12 and 13 (4.86mm) years. After 13 years boys registered considerably greater values for systolic blood pressure at all ages than girls. At 6 years, boys and girls showed mean value of diastolic blood pressure as 63.29 mm/Hg and 64.67 mm Hg, respectively and these values increased to 84.59 mm/Hg in boys and 81.10 mm of Hg in girls at 17 years. Prevalence of hypertension was 5.66% among boys and 5.07% in girls. The prevalence of prehypertension was 5.23% and 5.62% in boys and girls respectively. Chi-square values showed significant differences between boys and girls at 9, 10, and 14-16 years in the prevalence of hypertension ( $p < 0.05$ ). Both overweight+obese boys and girls reported higher prevalence of hypertension as compared to their normal and thin counterparts. Of all the measurements and indices, blood pressure showed maximum correlation with weight and BMI. Regression analysis showed that BMI was a significant predictor of high blood pressure among adolescents of the present

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**66. Development of gluten free snacks using chickpea flour and flax seeds for celiac patients**

**Link:**<https://www.jetir.org/papers/JETIR2110326.pdf>



## **DEVELOPMENT OF GLUTEN FREE SNACKS USING CHICKPEA FLOUR AND FLAX SEEDS FOR CELIAC PATIENTS**

Megha Gupta and Vasudha Bansal\*

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### **ABSTRACT**

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### **67. Fighting against Severe Acute Respiratory Syndrome: A Systematic Review on Plant Foods and Natural Products as Complementary Herbal Medicines**

**Link:** <https://www.bibliomed.org/mnsfulltext/196/196-1614907739.pdf?1672815207>

## Fighting against Severe Acute Respiratory Syndrome: A Systematic Review on Plant Foods and Natural Products as Complementary Herbal Medicines

Farhan Mohiuddin Bhat<sup>a</sup>, Thanongsak Chaiyaso<sup>b,c</sup>, Mohammed Wasim Siddiqui<sup>d</sup>, Jomkhwon Meerak<sup>e</sup>, Vasudha Bansal<sup>f</sup>, Chuda Chittasupho<sup>g</sup>, Chandan Shivamallu<sup>h</sup>, Jagadeesh Devaraj<sup>i</sup>, Shashanka K Prasad<sup>j</sup> and Sarana Rose Sommano<sup>k,\*</sup>

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### ABSTRACT

The corona pandemic 2019 (CoVID-19) has encouraged social movement for the physical distancing and awareness for the use of natural products of medicinal plants for home remedies. Scientists are working to unravel the genetic makeup of corona virus i.e., the causative agent of CoVID-19 in order to find treatments for the infection. Until now, even medicine and vaccine have been formulated in order to help cure the disease. The primary objective of this article is to identify and analyse the published articles in the areas of complementary herbal plant application for antiviral and anti-inflammatory properties, ways to enhanced immunity, and to cure infectious symptoms. One of the paramount options including the use of herb-based medicinal derivatives have been proposed to cure infections with the positive outcome. Most of the established traditional medicinal systems like Traditional Chinese medicine and Ayurveda have recommended a list of several potent herbal and essential oils that ease the symptoms of infections by their regular massaging on the scalp. These results can serve as a yard stick for the efficacious utilisation of food plants as home remedy and for the development of clinical study on disease prevention from natural resources in a global context.

**Keywords:** Chemometric, CoVID-19, flu-like symptoms, medicinal plants, MERS

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### INTRODUCTION

Viral respiratory infection can be classified by causative agents, for instance, common cold was caused by either influenza viruses (Type A, and B) or coronaviruses (Al-Tawfiq et al. 2013; Falsey et al. 2002).  $\beta$ -coronaviruses are also the major causes of the Severe Acute Respiratory Syndrome (SARS-CoV) and Middle East Respiratory Syndrome Corona virus (MERS-CoV), the epidemic outbreaks in 2003 and 2012, respectively (Chang et al. 2020; Desforges et al. 2020; Evelyne et al. 2020). The rhino-influenza and coronaviruses cause acute respiratory multi-organ dysfunction with lung inflammatory lesions and structural damage, and acute respiratory distress syndrome (ARDS) which lead to pulmonary failure and result in patient fatality (Adnan et al. 2020; Chen et al. 2020). World Health Organization (WHO) recommended regular washing of hands, masking of nose and mouth while sneezing and coughing, thorough cooking of food and maintain social distancing

from individuals who are symptomatic for respiratory infections. The new strain of corona virus came to existence in December 2019 which was later spread out globally with increasing number of deaths and hospitalizations in no time. The viruses were officially renamed SARS-CoV-2 by the International Committee on Taxonomy of Viruses (ICTV), which later known as coronavirus disease 2019 (or CoVID-19) (Lupta et al. 2019). The symptoms of infection started appearing after an incubation period of ~ 6 days. The most common symptoms at onset of CoVID-19 illness are fever, cough, and fatigue. Meanwhile, patients could also develop sinus infection, sputum production, headache, hemoptysis, dyspnoea, and lymphopenia (Ren et al. 2020; Wang et al. 2020) (Figure 1). To date (as of November 2020), increasing numbers of cases and deaths from CoVID-19 are still being reported globally with consistent increase in numbers (WHO 2020).

## 68. Antimicrobial Proteins/Peptides Isolated From Two Species of Bougainvillea.

Link - [https://ijpsr.com/?action=download\\_pdf&postid=70696](https://ijpsr.com/?action=download_pdf&postid=70696)

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IJPSR (2021), Volume 12, Issue 1 (Research Article)

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**ANTIMICROBIAL PROTEINS/PEPTIDES ISOLATED FROM TWO CULTIVARS OF BOUGAINVILLEA**

Samriti<sup>1</sup>, Sakesh<sup>1</sup>, Rajesh Biswas<sup>2</sup> and Kakoli Biswas<sup>\*1</sup>

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**Keywords:** Plant antimicrobial peptides, Thiourea, Deconvolins, Tricine SDS-PAGE, *Bougainvillea* 'Texas King', *Bougainvillea* 'Shubra'

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**ABSTRACT:** The rapid increase in multi-drug resistance (MDR) infections present a challenge in the development of therapies against them. Antimicrobial peptides (AMPs) can be the answer to this challenge. AMPs play an important role in host defense mechanisms. Plants are the precious source of natural antimicrobial molecules, including antimicrobial peptides known as Plant Antimicrobial Peptides (PAMPs). The present research work was aimed to isolate antimicrobial proteins or peptides from the leaf and flower extract of *Bougainvillea* 'Texas King' and *Bougainvillea* 'Shubra' cultivars. Protein pellets obtained after 50% and 25% ammonium sulfate precipitation of *B. 'Shubra'* leaf and flower extract showed maximum total protein of 311 µg/ml and 798 µg/ml respectively and 25% and 50% protein pellet of *B. 'Texas King'* leaf and flower extract showed maximum total protein of 529 µg/ml and 904 µg/ml respectively. Different protein pellets and supernatant were screened for antimicrobial activity against selected microorganisms. The protein samples having antimicrobial activity were electrophoresed on 12% Tricine SDS-PAGE to estimate the molecular masses of the antimicrobial protein/peptides. Molecular weight of antimicrobial proteins/peptides from the leaves of *Bougainvillea* 'Texas King' and *Bougainvillea* 'Shubra' cultivars ranged between 14.1 to 72.4 kDa. However, antimicrobial protein/peptides from *Bougainvillea* 'Texas King' and *Bougainvillea* 'Shubra' cultivars flowers ranged between 4.6 to 23.4 kDa. Above preliminary studies on *B. 'Texas King'* and *B. 'Shubra'* cultivars represents strong future prospects of antimicrobial proteins/peptides in therapeutics for the treatment of the diseases caused by *C. albicans*, *S. aureus*, and *B. licheniformis*.

**INTRODUCTION:** The rapid increase in multi-drug resistance (MDR) organisms poses a serious threat to public health. MDR infections presented a challenge in the development of new drug moieties against them. The paucity of new drugs to overcome the situation is adding to the complexity of the challenge.

However, ongoing research on antimicrobial peptides (AMPs) can provide some answers to this situation. Antimicrobial peptides (AMP) play an important role in the host defense mechanism. All living organisms, from microorganisms to plants and animals, have an active mechanism to defend themselves against pathogen attack. Peptides are present in a high amount in living organisms. They play an important role in the ancient mechanism of innate immunity by providing the first line of defense against pathogens<sup>1</sup>. Antimicrobial peptides consist of short sequence peptides ranging from 10-50 amino acid residues (2-9 kDa) positively charged, with more hydrophobic amino acid<sup>2</sup>.

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**ABSTRACTING AND INDEXING INFORMATION**

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2022

69. Active pharmaceutical ingredient (API) chemicals: a critical review of current biotechnological approaches

Link: <https://pubmed.ncbi.nlm.nih.gov/35135435/>

Review > Bioengineered. 2022 Feb;13(2):4309-4327. doi: 10.1080/21655979.2022.2031412.

## Active pharmaceutical ingredient (API) chemicals: a critical review of current biotechnological approaches

Vinod Kumar<sup>1,2</sup>, Vasudha Bansal<sup>3</sup>, Aravind Madhavan<sup>4</sup>, Manoj Kumar<sup>1,2</sup>, Raveendran Sindhu<sup>5</sup>, Mukesh Kumar Awasthi<sup>6</sup>, Parameswaran Binod<sup>7</sup>, Saurabh Saran<sup>1</sup>

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PMID: 35135435 PMCID: PMC8973766 DOI: 10.1080/21655979.2022.2031412

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### Abstract

The aim of this article was to generate a framework of bio-based economy by an effective utilization of biomass from the perspectives of agriculture for developing potential end bio-based products (e.g. pharmaceuticals, active pharmaceutical ingredients). Our discussion is also extended to the conservatory ways of bioenergy along with development of bio-based products and biofuels. This review article further showcased the fundamental principles for producing these by-products. Thereby, the necessity of creating these products is to be efficaciously utilization by small-scale farmers that can aid the local needs for bio-based materials and energy. Concurrently, the building up of small markets will open up the avenues and linkages for bigger markets. In nutshell, the aim of the review is to explore the pathway of the biotechnological approaches so that less chosen producers and underdeveloped areas can be allied so that pressure on the systems of biomass production can be relaxed.

**Keywords:** Pharmaceutical ingredients; biotechnological approaches; challenges; future prospects.

### Conflict of interest statement

No potential conflict of interest was reported by the author(s).

**70. Kaempferol: A flavonoid with wider biological activities and its applications**

**Link:**<https://pubmed.ncbi.nlm.nih.gov/35468008/#:~:text=Kaempferol%20and%20its%20derivatives%20are,and%20protect%20their%20functional%20integrity.>

> Crit Rev Food Sci Nutr. 2022 Apr 25;1-25. doi: 10.1080/10408398.2022.2067121.  
Online ahead of print.

## **Kaempferol: A flavonoid with wider biological activities and its applications**

Sneh Punia Bangar <sup>1</sup>, Vandana Chaudhary <sup>2</sup>, Nitya Sharma <sup>3</sup>, Vasudha Bansal <sup>4</sup>, Fatih Ozogul <sup>5</sup>, Jose M Lorenzo <sup>6, 7</sup>

Affiliations + expand

PMID: 35468008 DOI: 10.1080/10408398.2022.2067121

### **Abstract**

Kaempferol and its derivatives are naturally occurring phytochemicals with promising bioactivities. This flavonol can reduce the lipid oxidation in the human body, prevent the organs and cell structure from deterioration and protect their functional integrity. This review has extensively highlighted the antioxidant, antimicrobial, anticancer, neuroprotective, and hepatoprotective activity of kaempferol. However, poor water solubility and low bioavailability of kaempferol greatly limit its applications. The utilization of advanced delivery systems can improve its stability, efficacy, and bioavailability. This is the first review that aimed to comprehensively collate some of the vital information published on biosynthesis, mechanism of action, bioactivities, bioavailability, and toxicological potential of kaempferol. Besides, it provides insights into the future direction on the improvement of bioavailability of kaempferol for wide applications.

**Keywords:** Flavonoids; bioactivities; bioavailability; biosynthesis; flavonols.

### **Similar articles**

The molecular docking and molecular dynamics study of flavonol synthase and flavonoid 3'-monooxygenase enzymes involved for the enrichment of kaempferol.

Kumari G, Nigam VK, Pandey DM.

J Biomol Struct Dyn. 2022 Feb 2:1-14. doi: 10.1080/07391102.2022.2033324. Online ahead of print.

PMID: 35105279

Advance toward isolation, extraction, metabolism and health benefits of kaempferol, a major dietary flavonoid with future perspectives.

Yang L, Gao Y, Bajpai VK, El-Kammar HA, Simal-Gandara J, Cao H, Cheng KW, Wang M, Arroo RRJ, Zou L, Farag MA, Zhao Y, Xiao J.

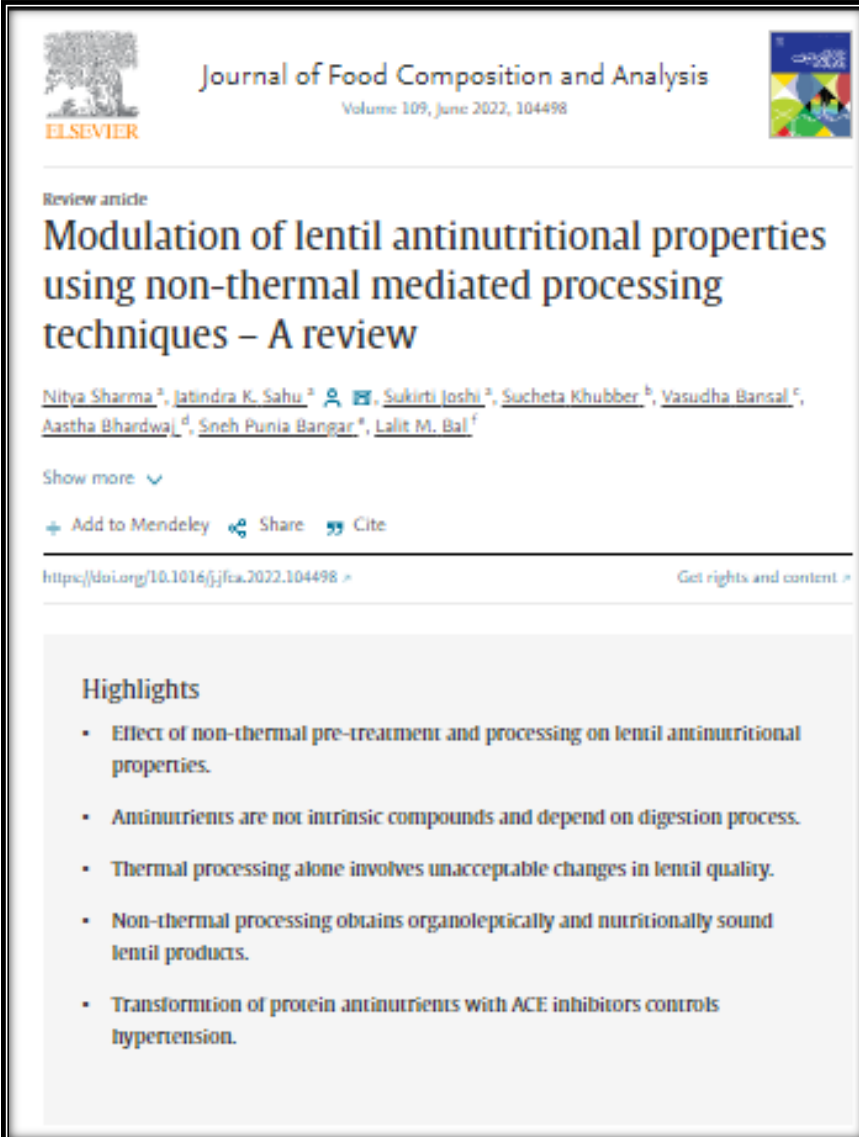
Crit Rev Food Sci Nutr. 2021 Sep 23:1-17. doi: 10.1080/10408398.2021.1980762. Online ahead of print.

PMID: 34554029

## **71. Modulation of Lentil Antinutritional Properties Using Non-thermal mediated Processing Techniques-A Review**



Link: <https://www.sciencedirect.com/science/article/abs/pii/S0889157522001168>



The image shows the cover page of the journal 'Journal of Food Composition and Analysis'. The journal is published by Elsevier and is Volume 109, June 2022, issue 104498. The article is a review article titled 'Modulation of lentil antinutritional properties using non-thermal mediated processing techniques – A review'. The authors listed are Nitya Sharma, Jatindra K. Sahu, Sukirti Joshi, Sucheta Khubber, Vasudha Bansal, Aastha Bhardwaj, Sneh Punia Bangar, and Lalit M. Bal. The page includes a 'Highlights' section with five bullet points summarizing the key findings of the review.

**Journal of Food Composition and Analysis**  
Volume 109, June 2022, 104498

Review article

## Modulation of lentil antinutritional properties using non-thermal mediated processing techniques – A review

Nitya Sharma <sup>a</sup>, Jatindra K. Sahu <sup>a</sup>, Sukirti Joshi <sup>a</sup>, Sucheta Khubber <sup>b</sup>, Vasudha Bansal <sup>c</sup>, Aastha Bhardwaj <sup>d</sup>, Sneh Punia Bangar <sup>e</sup>, Lalit M. Bal <sup>f</sup>

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<https://doi.org/10.1016/j.jfca.2022.104498> [Get rights and content >](#)

### Highlights

- Effect of non-thermal pre-treatment and processing on lentil antinutritional properties.
- Antinutrients are not intrinsic compounds and depend on digestion process.
- Thermal processing alone involves unacceptable changes in lentil quality.
- Non-thermal processing obtains organoleptically and nutritionally sound lentil products.
- Transformation of protein antinutrients with ACE inhibitors controls hypertension.

**72. Processing induced changes on coarse cereals (majorly millets) derived antioxidant compounds- a review**

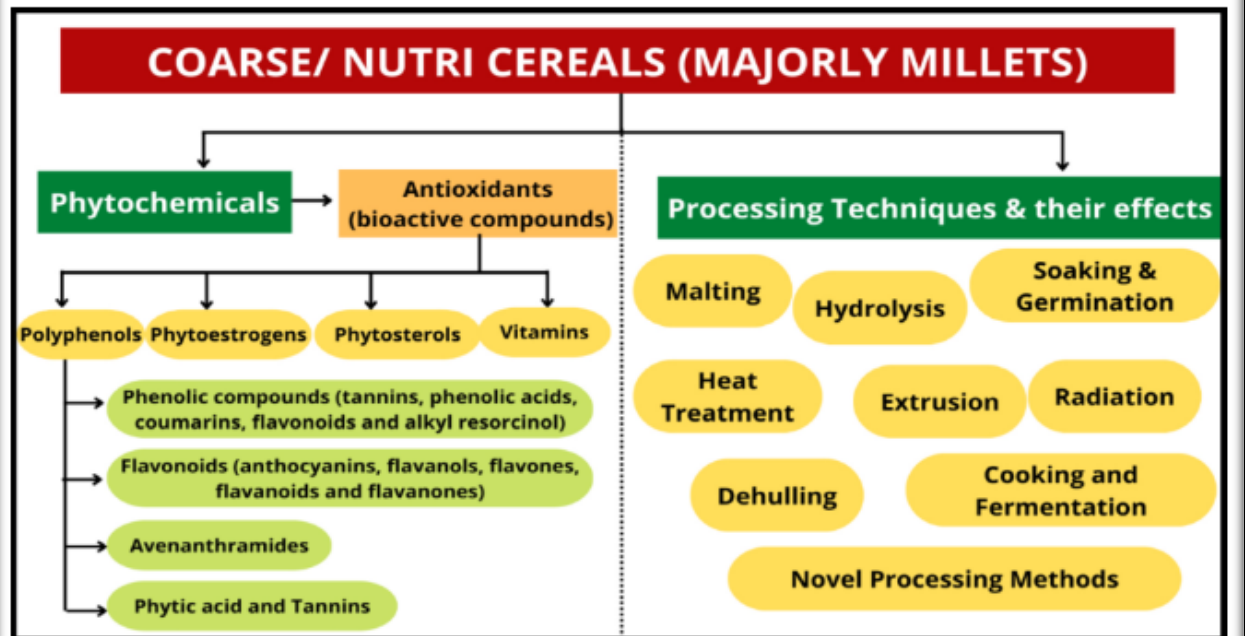
Link: <https://ffhdj.com/index.php/FunctionalFoodScience/article/view/938>

# Processing induced changes on coarse cereals (majorly millets) derived antioxidant compounds - a review

Dipesh Aggarwal, Aastha Bhardwaj, Anupreet Kaur Sobti, Sana Fatma, Nitya Sharma, Vasudha Bansal

## Abstract

Coarse cereals also known as nutriceals contain several bioactive components that provide many health-promoting and disease-preventing properties. This paper presents a review of the effect of processing on the various antioxidant compounds present in coarse cereals. Polyphenols, phenolic compounds, flavonoids, tannins, avenanthramides, vitamins, and phytoestrogens are the major categories that contribute to the antioxidant properties of coarse cereals. As per the literature, processing technologies like fermentation, boiling, malting, hydrolysis, soaking and germination, heat treatment, microwaving and extrusion, etc, have a significant effect on these antioxidant compounds present in coarse cereals. Coarse cereals and their processed products could be of potential benefit to human health, but extensive research is required to optimize the dietary recommendation for realizing these health benefits.



Keywords: Millets; flavonoids; polyphenols, processing techniques

### 73. Effect of incorporating plant-based quercetin on physicochemical properties, consumer acceptability and sensory profiling of nutrition bars

Link: <https://ffhdj.com/index.php/ffhd/article/view/888>

## Effect of incorporating plant-based quercetin on physicochemical properties, consumer acceptability and sensory profiling of nutrition bars

Uma Bansal, Aastha Bhardwaj, Som Nath Singh, Sucheta Khubber, Nitya Sharma, Vasudha Bansal

### Abstract

#### Abstract

**Background:** Plant-based quercetin is usually produced using fruit and vegetable wastes and is sold in the market in powdered form. Since it is already used as a supplement in various foods, therefore, a study was conducted to develop calorie rich nutrition bars using plant-based quercetin, that may serve as a promising functional snack with high antioxidant property for general consumption by teenagers, adults, athletes and sports persons. To surmise, this study deals with the development of a novel nutrition bar by utilizing a plant byproduct.

**Methods:** Plant based pure quercetin extract powder (98% Premium grade) was procured from HerbaDiet, Arkure Health Care, Rohtak, Haryana (India). Other materials used were: quinoa (*Chenopodium quinoa*) (Pro nature Organic Foods Pvt. Ltd.); instant white oats (Kellogg's India Pvt. Ltd., New Delhi); canola oil (Jivo Wellness Pvt. Ltd.); jaggery (Village product industries); nuts- comprising almond, cashew, walnut, roasted & salted pistachios (Happilo International Pvt. Ltd.).

**Objective:** The study was carried out in order to formulate calorie and nutrient rich bars for all the age-groups with a prime focus on antioxidant-quercetin.

**Results:** Quercetin-based nutrition bar was developed with different levels of quercetin (0, 20, 40, 60, 80 mg 100g<sup>-1</sup>), in addition to other ingredients including oats, quinoa, nuts, canola oil and jaggery. Addition of quercetin showed a significant ( $p \leq 0.05$ ) change on its water activity, color and textural attributes. With the increase in the quercetin content, a significant decrease in the water activity and increase in the lightness ( $L^*$ ) and hardness values of nutrition bar samples was observed. The quercetin enriched nutrition bars also showed an increase in total phenolic content as well as antioxidant capacity, as assessed by DPPH radical scavenging activity. Evaluation of overall acceptability and sensory profiling was done for all samples and the one with 60 mg 100g<sup>-1</sup> quercetin qualified as the best in sensorial attributes.

**74. Computational investigation of bioactive 2, 3-diaryl quinolines using DFT method: FT-IR, NMR spectra, NBO, NLO, HOMO-LUMO transitions, and quantum-chemical properties**

**Link:** <https://www.scilit.net/article/6c29b0618a16cbafba7a2e5a283183cd>

## Computational investigation of bioactive 2,3-diaryl quinolines using DFT method: FT- IR, NMR spectra, NBO, NLO, HOMO-LUMO transitions, and quantum-chemical properties

Shashi Janeoo, Reenu, Amandeep Saroa, Rakesh Kumar, Harminder Kaur

Published: 26 December 2021 by Elsevier BV in Journal of Molecular Structure

Journal of Molecular Structure, Volume 1253; <https://doi.org/10.1016/j.molstruc.2021.132285>

[Publisher Website](#)

### Abstract

Quinoline derivatives are widely utilized in a variety of applications, including medicine and materials. In this work our previously developed bioactive fluorine-containing 2,3-diarylquinolines (1a, 1b and 1c) were investigated theoretically and compared with the experimental data. DFT was used to investigate the optimized geometry and geometric parameters using the B3LYP/6-311++G (d,p) basis set. DFT studies demonstrated a high degree of concordance of the predicted  $^1\text{H}$ ,  $^{13}\text{C}$  NMR, and FT-IR spectroscopic data with the experimental results. The DFT technique was used to explore HOMO-LUMO energies, global reactive parameters, NLO, NPA, and NBO characteristics using the aforementioned level of theory and basis set. HOMO-LUMO analysis revealed that compound 1c has a slightly narrower energy gap (4.3355eV) than compounds 1a (4.4626eV) and 1b (4.4645eV) suggesting all three compounds have significantly comparable NLO properties. The reported compounds have polarizability in the range  $40.17 - 42.53 \times 10^{-24}$  esu. Strong delocalization interactions between Lewis bonding and antibonding orbitals have been confirmed by NBO analysis.

### Graphical abstract

