



# PROCEEDINGS OF TWO-DAY NATIONAL SEMINAR

ON

**Health, Hygiene and Sanitation**  
(26<sup>th</sup> and 27<sup>th</sup> April 2019)



## LITTLE FLOWER DEGREE COLLEGE

(Affiliated to Osmania University)  
UPPAL, HYDERABAD

**Organized  
By**

**DEPARTMENT OF  
ZOOLOGY AND MICROBIOLOGY**

**In collaboration with**



**Telangana Academy of Sciences, Hyderabad,  
Telangana**

Venue: Montfort Hall, **LITTLE FLOWER DEGREE COLLEGE**



## PROGRAMME SCHEDULE

<b>DAY 1: 26<sup>th</sup> April 2019 Venue: Montfort Hall Little Flower Degree College, Uppal</b>	
10.00 am - 10.30 am	<b>Inaugural Session</b>
10.30 am - 11.30 am	<b>Keynote Address &amp; Session I</b> Dr. Shailaja Tetali Associate Professor, Indian Institute of Public Health
11.30am - 11.45 am	<b>TEA-BREAK</b>
11.45 am - 12.45 pm	<b>Session II</b> Dr. Vijaya Bhaskar Reddy Dept of Botany, Nizam College, Hyderabad
12.45 pm - 1.45 pm	<b>LUNCH</b>
1.45 pm - 2.45 pm	<b>Session III</b> Dr. Meghanathan Scientist, NEERI, IICT, Hyderabad
2.45 pm - 3.30 pm	<b>Oral Presentations</b>
<b>DAY 2: 27<sup>th</sup> April 2019 Venue: Montfort Hall, LFDC</b>	
10.00 am - 11.00 am	<b>Session IV</b> Dr. Sudha Rani Assistant Professor, School of Life Sciences, Pondicherry Central University, Pondicherry
11.00 am - 12.00 am	<b>Session V</b> Dr. Phani Kumari Assistant Professor, St. Anns college, Mehdipatnam, Hyderabad.
12.00 am - 12.15 am	<b>TEA-BREAK</b>
12.15 am - 1.15 pm	<b>Session VI</b> Dr. Bhima Bhukaya, Professor and HOD Department of Microbiology, Osmania University, Hyderabad.
1.15 pm -2.15pm	<b>LUNCH</b>
2.15 pm -3.00 pm	<b>Poster Presentations</b>
3.15 pm	<b>Valedictory function</b>



## NSHHSOP1

### BIOAEROSOL DETECTION, IDENTIFICATION AND IMPACT STUDIES IN INDOOR AND OUTDOOR ENVIRONMENTS IN NACHARAM

**Sujatha Uram and Alka Jha**

Department of Genetics, Department of Zoology St. Pious X Degree & PG College for women

#### ABSTRACT

Bioaerosols<sup>1</sup> are particles which may be biological origin like microbes, plants, animals etc., or may be artificial like house dust, organic waste etc., Most of the bioaerosols host on humans and moist places. Size of bioaerosol particles varies from below 1  $\mu\text{m}$  to 100  $\mu\text{m}$  in aerodynamic diameter. Indoor bioaerosols may originate from outdoor air and indoor reservoirs. Major sources of bacteria and viruses are humans and pets-sneezing, coughing, dander and saliva. Fungi, many bacteria, protozoa, algae and green plants (pollen) are present outdoors that are induced indoors by natural or mechanical ventilation.

Bioaerosols induce into human body by inhalation or by deposition on wounds. A possible reason of sick building syndrome (SBS) is the presence of Bioaerosols in the building Despite the defense mechanism of the body these Bioaerosols could cause damage to the body. Other common health effects of Bioaerosols are Viral: infections such as Common cold, Influenza<sup>2</sup>, Measles<sup>3</sup>, Bronchitis<sup>4</sup>, Fungal- Histoplasmosis<sup>5</sup>, Coccidiomycosis<sup>6</sup> and Blastomycosis<sup>7</sup> and Antigens: Allergic diseases of Hypersensitivity pneumonitis<sup>8</sup> (HP) Allergic asthma, Rhynitis<sup>9</sup> and Pergilosis<sup>10</sup>

Control Strategies include -After identifying the airborne microorganisms the source can either be eliminated or its strength can be reduced. Preventive maintenance is one the most effective ways to control the microorganisms indoors Maintenance of air handling systems and Humidifiers<sup>11</sup> using the re-circulated water should not be used. Steam should be used instead of cold water in humidifiers, heating and HVAC systems. Disinfectants<sup>12</sup> and biocides<sup>13</sup> should be used in the humidifier water reservoirs, which kill the microorganisms.

**KEYWORDS:** Bioaerosols<sup>1</sup> Influenza<sup>2</sup> Measles<sup>3</sup> Bronchitis<sup>4</sup> Histoplasmosis<sup>5</sup> Coccidiomycosis<sup>6</sup> Blastomycosis<sup>7</sup> Hypersensitivity pneumonitis<sup>8</sup> Rhynitis<sup>9</sup> Pergilosis<sup>10</sup> Humidifiers<sup>11</sup>



## NSHHSOP2

### ISOLATION AND IDENTIFICATION OF SOIL FUNGI OF ST. PIOUS X DEGREE & PG COLLEGE, HYDERABAD

**Pritha Ghosh\*, Sanjana, Sudha Sree, Shreya Prardhana, Daisy Divya, Garima Sharma, Kruthika Deepthi, Jaslin \*\***

\*Lecturer, Department of Microbiology, St. Pious X Degree & PG College, Hyderabad.

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### ABSTRACT

Fungi are one of the most important groups of organisms. Fungi play an important role in many aspects of human life, including medicine, food and farming. 10-fold serial dilution was performed and  $10^{-1}$ ,  $10^{-2}$ ,  $10^{-3}$ ,  $10^{-4}$  dilutions were taken into consideration for isolation. The media used for the isolation of fungi was PDA (Potato Dextrose Agar) medium. After the inoculation, the plates were incubated at  $28^{\circ}\text{C} \pm 2$ . The colonies were observed after 3-4 days of incubation. The criteria for identification was colony morphology followed by staining. The fungal organisms were identified using lactophenol blue staining. The different types of micro-organisms observed were *Aspergillus* sps, *Fusarium*, *Trichoderma*, *Cladosporium*, *Alternaria* and *Mucor*. In the present study an attempt was made to isolate the native fungal micro-organisms of our campus as the microflora around the rhizosphere and varies from genus to genus and it is specific to the plant environment and the results interpreted some significant observations which focus on the applied aspects of micro-organisms which hold immense importance in the allied fields.

### KEYWORDS:

Fungi, Serial dilution, PDA media, LPB staining



### NSHHSOP3

## **ALLERGENIC POLLEN TAXA FROM MANCHIPPA RESERVE FOREST, NIZAMABAD DISTRICT, TELANGANA STATE, INDIA**

**P. Ravi Raj and A.Vijaya Bhasker Reddy**

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### **ABSTRACT**

Present paper deals with the findings of allergenic pollen taxa from Manchippa Reserve Forest, Nizamabad district, Telangana state. A total of 202 plant species, which belongs to 56 families and 152 genera were collected. Out of 202 species, 16 species (7.9 %) of 7 families are to be found as allergenic. Family Caesalpinaceae dominated with 7 species, followed by Mimosoideae with 3 species and Poaceae with 2 species, families Sapindaceae, Myrtaceae, Arecaceae and Typhaceae with single species. Present study reveals that mainly Caesalpinaceae, Mimosoideae and Poaceae taxa are prone to be allergenic in the study area.

### **KEY WORDS:**

Allergenic pollen, Manchippa Reserve Forest, Nizamabad



## NSHHSOP4

### **BARRENNESS-TECHNOLOGY**

**Adepu Bhavani**

Department of Computer Science, Little Flower Degree College, Uppal, Hyderabad

### **ABSTRACT**

Infertility is growing problem in today's generation. Infertility affects one out of seven couples around the world. Most people will have the strong desire to conceive a child at some point during their lifetime. If conception has not occurred within 12 months of normal sexual life, then it is treated as infertility. There are two types of infertility mentioned male and female infertility. 27.5 million couples in India suffering from infertility. Technology is used to treat problem for many childless couples. Most of the calculations are based using the computer technology. Elective single embryo transfer can be done using technology. Machine learning can be used to predict the embryo which can give live birth in In-Vitro Fertilization. This paper deals with how Computer technology can treat infertility. Time lapse technology is used to check the development of the embryo at regular intervals. This information is then analyzed by a computer. Changes in technology can rapidly increase the growth rate and live births.

### **KEYWORDS:**

Infertility, Time lapse technology, Machine learning, In-vitro fertilization.



## NSHHSOP5

### FOLDSCOPE: A TOOL FOR ENVIRONMENTAL HEALTH RESEARCH

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#### ABSTRACT

Air pollution is a major global public health issue. In particular, the biological materials such as bacteria, fungi virus present in air/ aerosol cause severe illness to the living organisms. Among different microbes, fungi are one of the major groups that pose pollution major environmental threat and thus, evaluation of fungi in the air will help to determine the potential impact of fungi on human health. In addition, identification of fungi is important to set up management plans to eradicate the disease-causing agents. The identification of fungi is usually carried out through microscopes, which are high in cost and maintained in the laboratory. Additionally, transportation of microscopes to different place is difficult and needs careful handling which is tedious. Thus, the alternatives to microscopes for the identification of fungi are more important and beneficial for environmental health research. Foldscope is an ultra-low-cost origami-based paper microscope developed in the recent time and this study utilizes the foldscope as an alternate for lab microscope for the identification of fungi. In this study, we have used Potato Dextrose Agar (PDA) as a selective media for the growth of fungi. The PDA plates were exposed at two different locations: one was at a busy bus stop and another location was a parking slot. The plates were exposed to air in different time period. The plates were incubated at 30° C for 48 hours. After 48 hours, the fungal mycelial growth was observed in the plates. These fungal colonies were stained with lactophenol cotton blue dye and observed through foldscope. The results showed that the environmental air contains fungal species which are contagious. Fungi like *Aspergillus*, *Penicillium*, *Curvularia*, *Alternaria*, *Geotrichum*, *Fusarium*, *Trichoderma*, *Yeast*, *MicrosporumCanis* were identified through foldscope. Thus, this study employed foldscope as a tool for environmental health research. In summary, this study suggests that use of foldscope as an effective student tool for environmental health research.



## NSHHSOP6

### **AN ASSESSMENT OF KNOWLEDGE ATTITUDE AND PRACTICES IN FOOD SAFETY AMONG URBAN HOUSEHOLDS OF HYDERABAD**

**Pooja Jain<sup>1</sup> and P. Suma<sup>2</sup>**

Department of Food and Nutrition University College for Women, Koti, Hyderabad.

#### **ABSTRACT:**

Having awareness on better hygiene, health and food safety practice by the individual household is important for healthy lifestyle. Unsafe domestic food safety practices are increasingly linked with food borne illness. Domestic food handlers cause contamination if they lack hygienic food handling practices. A cross sectional study was conducted to assess the knowledge, attitude and practices in food safety and its association with Age and educational qualification among urban households. A sample size of 200 urban households were selected by random sampling and data was collected using self administered questionnaire. Results of the study revealed that 55% were having good knowledge and attitude, 45% were having poor knowledge and attitude, 53% of them followed good practices , 47% of them had poor practices , Participants were between age group of 20-70 years and their KAP enhanced with increase in age. KAP of participants enhanced with their level of education. Safe and Nutritious food at home as an initiative taken by FSSAI is about promoting food safety, hygiene and good nutrition in every Indian household. As a part of this initiative, FSSAI organized a Training programme for Domestic workers in Delhi. Training programmes have to be organized for households at specific intervals to create awareness and promote food safety.





## NSHHSOP7

### **STUDY ON ANTHROPOMETRIC MEASUREMENTS AND PHYSICAL ACTIVITY IN TYPE 2 DIABETIC ADULTS, ATTENDING PUBLIC HOSPITAL, HYDERABAD.**

**Summaiya Sadaf<sup>1</sup>, P. Suma<sup>2</sup>, Dr. LathaSashi<sup>3</sup>.**

<sup>1</sup>Nutrition And Dietetics, Osmania university College for Women, Koti, Hyderabad.

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#### **ABSTRACT:**

Diabetes mellitus is a metabolic disorder characterized by the presence of hyperglycemia due to defective insulin secretion, defective insulin action or both. Weight management is a key component in the treatment of over-weight or obese patients with Type 2 DM. The objectives of the study were to assess the dietary pattern of type 2 diabetic patients and to investigate their lifestyle. A cross sectional study was conducted among type 2 diabetic patients attending diabetic outpatient block, Osmania hospital at Hyderabad. A sample of 100 patients with mean age of 48.9 was selected randomly. A well-structured questionnaire was used to collect data on socio demographic profile and anthropometric measurements. The results reveal that out of the total 88 patients, 71.6% were having BMI of 25-29.9 and 24.1% were having BMI 30-34.9 of grade I obesity. The grade II obese patients were 4.3% having BMI of 35-39.9. WHR of 72.7% of respondents were having greater than 0.8 among females and 0.9 in males reflecting central obesity. Physical activity was found to be very low accounting for only 27.5%. Dietary transition coupled with physical inactivity; consumption of junk food appears to have contributed to the high prevalence rate of obesity in type 2 diabetic patients of the urban population



## NSHHSOP8

### **DIETARY ASSESSMENT OF MICRONUTRIENTS AMONG ADOLESCENT GIRLS OF AGE 13-18 YEARS**

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#### **ABSTRACT**

Micronutrient deficiency largely goes unnoticed by the general public, by many decision makers and even by the affected individuals themselves and hence this form of malnutrition is also called ‘hidden hunger’. Micronutrients malnutrition is still a major public health problem over large areas of the world, especially developing countries and particularly among the low socio-economic groups. Study includes 100 adolescent girls of age 13-18 years were selected randomly from Hyderabad city. A well designed and structured Questionnaire are used to collect data on General information, Food Frequency Questionnaire and one day 24-hours Dietary Recall and calculated using food consumption tables and compared with Recommended Dietary Allowances (RDA). The results of the study show that 77% were deficient in Iron, 61% were deficient in Calcium, 65% were deficient in Phosphorous, and 70% were deficient in Folic Acid. An intake of Ascorbic Acid of 91% has met the requirements of Recommended Dietary Allowances. A well-balanced nutritious food should be consumed to prevent micro-nutrient deficiencies and to attain a good physical and mental well-being of an individual. Nutrition education intervention programs helps in creating awareness on the importance of these micronutrients to lead a healthy adolescent life.



## NSHHSOP9

### **ANTIBACTERIAL ACTIVITY OF STERCULIA FOETIDA LEAF, FLOWER AND FRUIT EXTRACTS**

**Mrs. Naziabegum , Ms. Rajeetha Mondal**

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#### **ABSTRACT**

Finding healing powers in plants is an ancient idea. Historically, therapeutic results have been mixed, quite often cures or symptom relief resulted. Wild fruits contain many bioactive compounds, such as anthocyanins and flavonoids and many studies have shown that wild fruits possess various bioactivities and health benefits, such as free radical scavenging, antioxidant, anti-inflammatory, antimicrobial, and anticancer activity. Therefore, wild fruits have the potential to be developed into functional foods or pharmaceuticals to prevent and treat several chronic diseases. Aqueous and Ethanol extracts of leaves, flowers and fruits of *Sterculia foetida*. were examined for their antibacterial activity. To determine these activities, the extracts were tested against bacteria through disc diffusion assay. The extracts revealed antibacterial activities, inhibiting the growth of *Staphylococcus aureus* and *Escherichia coli* in the laboratory. Wild fruits are exotic or underutilized. In the present article, we review current knowledge about the bioactivities of wild almond, which is valuable for the exploitation and utilization of wild fruits. Thus, these plant extracts can possibly be used to produce alternative forms of antimicrobials.



## NSHHSOP10

### **NUTRITION AND ITS DEFICIENCIES IN RELATIONSHIP TO CANCER AND PREVENTION**

**A. Harini,**

Dept of French, Little Flower Degree College, Uppal

#### **ABSTRACT**

Nutrition is the science that interprets the interaction of nutrients and other substances in food in relation to maintenance, growth, reproduction, health and disease of an organism. It includes food intake (ingestion), digestion, absorption, transport, assimilation, biosynthesis, catabolism, and excretion. In humans, an unhealthy diet can cause deficiency-related diseases such as blindness, anaemia, scurvy, preterm birth, stillbirth and cretinism, or nutrient excess health-threatening conditions such as obesity and metabolic syndrome; and such common chronic systemic diseases as cardiovascular disease, diabetes, and osteoporosis. Under nutrition can lead to wasting in acute cases, and the stunting of marasmus in chronic cases of malnutrition. Nutrition is related to the development of cancer in three ways: (1) food additives or contaminants may act as carcinogens, co-carcinogens, or both; (2) nutrient deficiencies may lead to biochemical alterations that promote neoplastic processes; and (3) changes in the intake of selected macronutrients may produce metabolic and biochemical abnormalities, either directly or indirectly, which increase the risk for cancer. Specific carcinogens play a minor role as initiators in the relationship between nutrition and the development of cancer. Dietary recommendations for cancer prevention typically include an emphasis on vegetables, fruit, whole grains and fish and an avoidance of processed and red meat (beef, pork, and lamb), animal fats, pickled foods and refined carbohydrates.

#### **KEYWORDS:**

Nutrition, Deficiency Diseases, Cancer, Causes, Prevention



## NSHHSOP11

### ANALYSIS OF POTASSIUM LEVELS IN FRUITS BY FLAME PHOTOMETRY

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#### ABSTRACT

Potassium is the eight most common elements by mass (0.2%) in the human body, so that a 60kg adult contains a total of about 120gms of potassium. Potassium cations are important in neuron (brain and nerve) function, and in influencing osmotic balance between cells and interstitial fluid, with their distribution mediated in all animals by Na<sup>+</sup> / K<sup>+</sup> - ATPase pump. Potassium is also important in preventing muscle contraction and in impulse transmission through action potentials. It is the major cations inside animal cell and is thus important in maintaining fluid and electrolyte balance in the body. Potassium “activates” at least 60 different enzymes involved in plant growth.

Potassium levels in fruits are analyzed by Flame Photometry. Flame photometry (more accurately called flame atomic emission spectrometry) is the branch of atomic spectroscopy in which the species examined in the spectrophotometer are in the form of atoms.

The main objectives of this analysis are to determine the levels of potassium in fruits and discuss the benefits and risk of potassium in diet and this can be used to create awareness among people to prevent the problems like neurological disorders, hypokalemia, hyperkalemia and associated medical complications in future.

The samples selected for study are fruits which are assumed to have good amount of potassium. A total of 15 samples were analyzed for potassium content. The analyzed fruits have shown a wide range of potassium levels based on which they were categorized into high medium and low potassium containing fruits. This data can be used by the physician or nutritionist to advise the diet in hyperkalemic or hypokalemic conditions.

#### KEYWORDS:

Potassium, Impulse Transmission, Hyperkalemic, Hypokalemic, Neurological Disorders, Electrolyte Balance.



## NSHHSOP12

### **BIOMARKERS FOR ENVIRONMENTAL MONITORING IN ECOTOXICOLOGY**

**Mary Chandana, Ch. Jhansi Lakshmi, J. Usha Rani**

\*Department of Microbiology, Little Flower Degree College, Uppal, Telangana State, India

#### **ABSTRACT**

Ecotoxicology is a combinatorial study of toxicology in relation to ecology where in it deals with the effects of toxic substances on the health of people and other components of the ecosystem. The nature of these toxic substances can be physical, chemical or biological and these xenobiotics are increasing more than ever before. They have the potent to affect the integrity of ecosystem by disrupting the biodiversity. Therefore, early alert signs or Biomarkers provide a means for environmental monitoring by assessing the risk at an early stage. A biomarker can be defined as an alteration in biological response, starting from molecular through cellular and physiological or biochemical responses to behavioral disturbances, associated with exposure to environmental contaminants and their toxic effects. Biomarkers are mostly macromolecules like proteins, enzymes and other biomolecules like cytokines and epigenetic modifications. Apart from these, there are oxidative stress metabolites, oxidative damage to cells and antioxidants, majorly seen in plants can also be used as biomarkers in ecotoxicology. Intracellular formation of Reactive Oxygen Species (ROS) in response to environmental pollutants can result in several oxidative stress defense mechanisms. Sentinel species are the organisms which are sensitive to environmental pollutants due to their greater susceptible nature and function as ecological health indicators, providing evidences to the onset of an anthropic event, before the measurable effects are observed. Recent advancements in the field of molecular biotechnology lead to the development of modern and futuristic, highly sensitive biomarkers of exposure, effect, and susceptibility to the adverse effects of terrestrial and aquatic pollutants. Integrated usage of multiple biomarkers can greatly increase the responses of biomarkers in environmental risk evaluation.

#### **KEYWORDS:**

Ecotoxicology, Biomarkers, Proteins, Epigenetic modifications, Reactive Oxygen Species, Sentinel species, Environmental monitoring.



## NSHHSOP13

### COMBATING UNDERNUTRITION AMONG WOMEN AND CHILDREN OF TELANGANA

**Vyshnavi Muniganti and Dupati Poojitha**

Little Flower Degree College, Uppal, Hyderabad

#### ABSTRACT

Health is "a state characterized by anatomic, physiologic, and psychological integrity; ability to perform personally valued family, work, and community roles; ability to deal with physical, biological, psychological, and social stress". Systematic activities to prevent or cure health problems and promote good health in humans are undertaken by health care providers. [Telangana is one of the few states where a separate department is functioning for development and welfare of women and children. In many states, these come under the Social

welfare Department. The broad mandate of the Department is to have a holistic development of women and children. For the holistic development, the Department has been implementing the world's largest and most unique outreach programme for Integrated Child Development Services (ICDS) providing a package of services comprising supplementary nutrition, immunization, health check up and referral services, pre-school and formal education. There are 35,700 anganwadi centers functioning in the state in 149 ICD projects (31,711 centers and 3989 mini centers). An implementation of ICD 's has resulted in improvement of the nutritional status of women and children in the state. The State Government introduced Arogya Lakshmi Programme which involves spot feeding of 'one full meal' for pregnant and lactating women at Anganwadi Centre along with the administration of Iron and Folic Acid (IFA) tablet. The program emerged on 01.01.2013 in ICD 's projects with adverse health and nutrition indicators. After State bifurcation, 2015 onwards it was scaled up in 149 ICD 's.

#### OBJECTIVES OF THESE PROGRAMS ARE:

- Enhance the quality and acceptability of supplementary nutrition by pregnant and lactating women.
- Ensure food supplied is consumed by only the pregnant and lactating women rather than the family.
- Ensure that pregnant and lactating women consume 90 + IFA tablets.
- Improve the enrollment of mothers at Anganwadi centers.
- Eliminate number of PLW 's with anaemia or who are under nourished.
- Reduce the incidence of low birth babies and malnutrition among children.
- Ensure that PLW's receive health checkups and immunization.
- Reduce the incidence of IMR's and MMR's.

All these programs are aimed to achieve a healthy community and there is marked improvement in the health of women and children of the underprivileged.

#### KEY WORDS:

Health, Nutrition, Welfare scheme, healthy community, supplementary nutrition, anganwadi, immunization, pregnant and lactating mothers.





## **TECHNOLOGICAL AIDS IN EPIDEMIOLOGY**

**Sarala Devi**

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### **ABSTRACT**

Epidemiology is the branch of medicine which deals with the incidence, distribution, and possible control of diseases and other factors relating to health. The definition given by WHO (World Health Organization) for the term Epidemiology is “Epidemiology is the study of the distribution and determinants of health-related states or events (including disease), and the application of this study to the control of diseases and other health problems.” Epidemiology involves the methods to identify the source of a disease and use this information to arrive at measures to prevent it and thereby helps to preserve and maintain public health. Computers have become an integral part of life in current generation. The application of computers can be found in many fields and Epidemiology is no exception. This paper attempts to bring out the details about how computers and technology are useful in the field of Epidemiology. It also paper presents an insight into the application of mobile technology and artificial intelligence in dealing with various diseases.

### **KEYWORDS:**

Artificial Intelligence, Expert Systems, Fuzzy Logic, GIS, Mobile Technology, Telemedicine, Telehealth





## NSHHSOP15

### **WASTEWATER MANAGEMENT AND CONTROL OF VECTOR BORNE DISEASES IN LOTHUKUNTA AREA, TELANGANA STATE**

**R. K. Devi, Sai Sree and Amrita Gautam**

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#### **ABSTRACT**

A perspective study was made in a tertiary urban slum of lothukunta, about 25 houses were screened to find out the methods of wastewater management of the colony people and the prevalence of any vector borne diseases in the year 2018-2019. To create awareness in the urban slum areas, for conserving rainwater and recycling the domestic water for improving the Ground water resources. Focus was laid on the morbidity of the diseases like malaria, dengue and enteric fever etc. caused due to the breeding of vectors like mosquitoes and houseflies in the stagnant water. The statistical data was collected from the Urban slum of lothukunta by a proper questionnaire and results were analysed. Water is needed for irrigation, Agriculture, power generation, Industries, Domestic requirements, livestock management, Hospitals, Food processors, cooling towers etc. Rain being the main source of water, harvesting of which creates an eco friendly environment improving the quality of Ground water and preventing soil erosion. Methods of water conservation are classified into 4 broad groups 1) Domestic plumbing fixing 2) land scape irrigation 3) Rainwater soakage pits 4) Prevention of deforestation. Improving ground water resources by digging rainwater pits, Directing the rainwater collected from the roof top to water pits or borewells, planting trees and preventing deforestation thus maintaining ecological balance. Statistics on 25 houses in a locality at lothukunta, showed that 5 houses (20%) had rainwater pits, 14 houses (56%) had waste water recycle facility and 10 houses (40%) had recyclable bath water facility. Municipal water was sufficient for 18 houses in the locality; The following Endemic diseases were seen, malaria 5 cases, Dengue was noted in 3 cases and Enteric fever was seen in 3 cases. Middle class families were most affected with water conservation problems, due to their residence being flats; there was no rainwater pit provision. Survey report showed only 5 had rainwater pits. Stagnant rainwater was the main source of mosquito breeding, causing endemic diseases, like Malaria, Dengue and Enteric fever.

#### **KEY WORDS:**

Morbidity, Vector borne, Endemic disease



## NSHHSOP16

### **POLLEN MORPHOLOGY OF SOME MEDICINAL PLANTS IN 2 DIFFERENT PLANT FAMILIES FROM POCHARAM WILDLIFE SANCTUARY (FOREST) MEDAK, MEDAK DISTRICT**

**R. Nagendar**

Research Scholar, Department of Botany,  
Nizam College (Autonomous), OU Hyderabad, Telangana

#### **ABSTRACT**

The present study investigated the variations and similarities in the pollen morphology of 38 species of Asteraceae & Fabaceae from Pocharam Wildlife Sanctuary (forest) used for different medicinal purposes. Mature flowers of these plants were cut off, the pollens dusted on a slide containing a drop of glycerin, observed under microscope and micro-photographed using Lucida WILD MPS 52 microscope camera. Generally, the pollens are radically symmetrical, isopolar, tricolporate and spherical. The equatorial diameter of the species studied ranged from 17.14µm to 55.72µm while the length of the spines varied generally varied from 1.09µm to 8.45µm. The pollen morphology of the species investigated was found to have diagnostic value and however supports the previous classification of these plants as distinct species.

#### **KEYWORDS:**

Pollen morphology, Medicinal Plants, Asteraceae, Fabaceae



## NSHHSOP17

### **DIGITALIZATION OF AGRICULTURE WITH AN APPROACH TOWARDS VERTICAL FARMING USING MACHINE LEARNING TECHNIQUES**

**Raman R.K.**

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#### **ABSTRACT**

India is a hugely populated agricultural nation and the global population is also expected to reach more than nine billion by 2050. The above stats indicate that the agriculture production has to increase more. Mostly the forecast is done manually which might not be accurate; in order to forecast the crop production accurately the technology can play a huge role in making the farming activity more efficient. This paper mainly focuses to reassess the possibilities to improve the crop production mainly in urban areas using the vertical farming approach. Since the plants are grown in an artificial environment, the adequate care has to be taken by using the Machine Learning (ML) and Internet of Things (IoT). Using ML & IOT, there is huge analysis can be done on yield prediction, weed detection, water management etc.

#### **KEYWORDS:**

Agriculture, Vertical Farming, Machine Learning, IoT, Technology.



## NSHHSOP18

### MANAGEMENT AND DISPOSAL OF MICROBIOLOGICAL AND CARCINOGENIC AGENTS IN LABORATORIES-A REVIEW

**Tayya Raga Sudha\* and Viplav Duth Shukla\*\***

\*Asst. Prof. of Microbiology, Government City College, Hyderabad

\*\*Asst. Prof. of Chemistry, Government City College, Hyderabad

#### ABSTRACT

Over the few past decades there are some considerable reports on laboratory acquired infections by the workers and researchers working with pathogenic agents like meningococci, HIV, hepatitis-C, dengue virus etc. The accidental infections acquired by the lab workers are to be evaluated and set periodical standards to prevent such incidences. The practical work at under graduation in Microbiology involves handling pathogenic microbes and potential carcinogenic agents. There is a need to develop awareness right from under graduation level for pupils pursuing Microbiology as one of their electives.

The present review is an attempt to bring awareness among the readers about the biosafety levels and the methods used to manage and dispose hazardous microbiological and carcinogenic agents in educational and research institutes. The current study is expected to be helpful in establishing biologically safe laboratories in educational and research institutes.

Certain chemicals used in industries and labs act as carcinogens. Carcinogenic chemical substances are regulated by the Occupational Safety and Health Administration (OSHA). Carcinogenic chemical waste materials generated is hazardous hence, treated properly. Laboratory decontamination and destruction of carcinogens in laboratory wastes must be carried out after the conduct of the experiment.

#### KEYWORDS:

Biosafety, Laboratory Acquired Infections, Carcinogens, Laboratory-Waste-Disposal



## NSHHSOP19

### **ANTIBACTERIAL ACTIVITY OF SILVER NANOPARTICLES IN FABRICS**

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#### **ABSTRACT**

There has been an extraordinary explosion of research in chemical nanomaterials for many decades across the world, showing that nanomaterials are here to stay. There are currently many products using nanomaterials in the market. Since ancient times, Indians have used beneficial metals like silver and gold for both medicinal and daily use purposes, probably without knowing about the nano-size effect. The unique properties of nanomaterials arise from their size, defined as  $<100$  nm, which provides an exponentially higher surface to volume ratio when compared to micron sized particles. This property is exploited in the paint, food processing, information technology, fabric industries, etc. This paper focuses on the anti-bacterial action of Silver nanomaterials in fabrics. Mechanism of action on bacteria and microbes are described. Some challenges in continued use of silver nanoparticle enhanced fabrics are stated. Special notice is made on the health and safety issues related to such engineered fabric

#### **KEYWORDS:**

Silver Nano Particles, Antibacterial, Engineered fabric, Beneficial metal



## **FOOD IN BETWEEN MEALS OF HOSTELLERS**

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### **ABSTRACT**

Nutrition is very essential in every stage of life. Every aspect of the stage requires some special needs for the body which are to be supplied through food. The period of adolescence plays a vital role which lay foundation to lead a healthy life in long run. Alters in eating patterns occur during this transitional stage. The Purpose of this study is to evaluate the nutritional status of the sample of 150 students residing in Osmania University hostel campus and find out if their interim food habits have impact on regular dietary intake. Using electronic databases like Google scholar and D-space MIT university Libraries, a literature search was conducted to retrieve articles that were published between 2010-2017 and that have reported on the nutritional status and dietary intake of the students. The method of approach adopted in this research was qualitative. The statistical method of analyzing data adopted in this study was t-test paired two samples for means. Calorie intakes for a day are calculated to find out deficit from recommended daily calories. The study concludes that interim food habits in between regular food timings will have significant impact on routine dietary intake as well as impacting nutritional requirements. Based on findings, recommendations made were: Monthly feedback should be taken, and cooking standards should be improved, menu plans should be revised in order to make candidates prefer routine food instead of interim junk food. Only licensed candidates should be permitted to run mess and a diet planner should be appointed to monitor the diet. This research supports further study on improving the health profiles of the young adults by using models of cost-effective analysis to adopt new innovative strategies to prevent malnutrition and long-term effects of it.

### **KEYWORDS:**

Transitional stage, interim food habits, cost effective analysis, innovative strategies, Malnutrition.



## NSHHSOP21

### **DIETARY ASSESSMENT OF MICRONUTRIENTS AMONG ADOLESCENT GIRLS OF AGE 13-18 YEARS**

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#### **ABSTRACT**

Micronutrient deficiency largely goes unnoticed by the general public, by many decision makers and even by the affected individuals themselves and hence this form of malnutrition is also called 'hidden hunger'. Micronutrients malnutrition is still a major public health problem over large areas of the world, especially developing countries and particularly among the low socio-economic groups. Study includes 100 adolescent girls of age 13-18 years were selected randomly from Hyderabad city. A well designed and structured Questionnaire are used to collect data on General information, Food Frequency Questionnaire and one day 24-hours Dietary Recall and calculated using food consumption tables and compared with Recommended Dietary Allowances (RDA). The results of the study show that 77% were deficient in Iron, 61% were deficient in Calcium, 65% were deficient in Phosphorous, and 70% were deficient in Folic Acid. An intake of Ascorbic Acid of 91% has met the requirements of Recommended Dietary Allowances. A well-balanced nutritious food should be consumed to prevent micro-nutrient deficiencies and to attain a good physical and mental well-being of an individual. Nutrition education intervention programs helps in creating awareness on the importance of these micronutrients to lead a healthy adolescent life.



## **NOSOCOMIAL INFECTIONS**

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### **ABSTRACT**

Nosocomial infections can be defined as those occurring within 48 hrs. of hospital admission, three days of discharge, thirty days of an operation. They affect one in ten patients admitted to hospital. Annually, this results in 5000 deaths with a cost to the National Health Service of a billion pounds. On average, a patient with hospital acquired infection spent 2.5 times longer in hospital, incurring additional cause of 3000 pounds more than an uninfected patient. Intensive care units have the highest prevalence of hospital acquired infections in the hospital setting. The European Prevalence of infection in intensive care study, involving over 4500 patients, demonstrated that nosocomial infection prevalence rate in ICU was 20.6%. ICU patients are particularly at risk from nosocomial infections as a result of mechanical ventilation. The organisms were grown on specific media and biochemical tests were done for future characterization.

Following organisms were identified:

1. *Staphylococcus spp*
2. *Escherichia spp*
3. *Salmonella spp*
4. *Pseudomonas spp*
5. *Klebsiella spp.*





## NSHHSOP23

### AN EPIDEMIOLOGICAL AND SEROLOGICAL SURVEY ON DENGUE FEVER

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#### ABSTRACT

Dengue is a febrile illness caused by Flavi virus group and transmitted mainly by *Aedes aegypti*. The disease is mostly prevalent in tropical and subtropical regions which are known to be one of the major causes of paediatric morbidity and mortality as the significant effect of virus is observed mainly in children. The clinical manifestations of Dengue ranges from a mild dengue fever to a highly fatal Dengue hemorrhagic fever and Dengue shock syndrome. Primary infections are characterized by a rise in IgM levels while the secondary infections are characterized by an increase in IgG titre value. These two batteries of tests signify the level of infection and the two neutralizing antibodies play an important role in protecting against infection. Recent reports included the testing of Nonstructural viral protein NS1 which is an early diagnostic marker. Keeping in view of the above observations, the present work was undertaken to study the prevalence of circulating NS1 antigen, IgG and IgM antibodies in population of Hyderabad. Secondary data was collected from a diagnostic center in Hyderabad where the sample size accounts to a total of 6,757 and the data was analyzed. The present study observed that 60.1% of Males were more susceptible to Dengue virus than female population and 29.1% of children in the age group of 0-10 showed high titres of circulating antibodies and NS1 antigen than other age groups. Also, the present study reveals that there is a significant difference among Dengue Symptoms with respect to Age Group, different months in a year and Seasons ( $p^* < 0.05$ ). However, limited research on epidemiological surveys was observed in developing countries like India. Hence the present study gives an overall serological distribution of Dengue virus in Hyderabad.

#### KEYWORDS:

Dengue virus, NS1 antigen, Epidemiological survey, IgM and IgG



## NSHHSOP24

### **ESTIMATION OF UROBILINOIDS FOR SCREENING OF FAECAL MATTER IN POPULAR STREET FOODS IN HYDERABAD, TELANGANA**

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#### **ABSTRACT**

The street foods play an important socioeconomic role in meeting food and nutritional requirements of city consumers at affordable prices to the lower- and middle-income people. India's urban and peri-urban areas are characterized by a chain of fast food eateries and Hyderabad is not an exception. However, these urban areas are also notorious for poor sanitation conditions, indiscriminate dumping of wastes and open urination and defecation. During the past few years the growth of Hyderabad city has seen influx of people and simultaneously the streets of the City have become attraction to many customers who eat from street vendors. Contaminated street food has been linked to food-borne illness and food-borne outbreak and the health risks posed by ready-to eat, low cost foods are many. Contamination of foods by faecal material is the major cause of food borne diseases and faecal matter in food is an indicator of poor hygiene and a potential microbiological contamination. Microbial quality of street vended foods has been evaluated by many researchers in order to gain an understanding on the safety of the street vended foods. In the present article we evaluate the applicability of quick, simple, and easy to use urobilogen test to screen the presence of faecal matter in the streets-vended foods in the Hyderabad City in order to gain an understanding quality of these street vended foods. A study was conducted in different streets and open places samples obtained from three different locations in Hyderabad City to determine the quality of street foods. A total of 20 foods samples were randomly collected from a variety of mobile and



stable vendors. This study was conducted to identify faecal matter in Pani-Poori and other semi-cooked fast food sold in different parts of the capital city Hyderabad. We purposively selected 10 sites where Pani- poori and chat was sold in the city. From each site we randomly selected chat stalls for sample collection. At each stall we aseptically collected approximately 100 gm of a combined sample of pani-poori and collected swabs from the workers hands, but few only gave the samples. Detection of Faecal Urobilinoids as an indicative method of faecal contamination was used. In the presence of zinc ion faecal matter was identified by the display of the well- known green fluorescence used in the Schlesinger test for the urobilinoids, together with several other fluorescence's. Taken together, these results indicate that tested street foods samples are of low quality, contain fecal matter that their consumption may pose a risk of food-borne disease, and that good hygienic practices should be required to ensure public health. Although we have followed a visual technique which may have reduced the detection limit, we plan to utilize spectrophotometric methods to detect urobilinoid fluorescence to increase the efficiency of our test.

**KEY WORDS:**

Street Food, Urobilogen, food safety, Public health, Hyderabad.



## NSHHSOP25

### **STRATAGEMS AND STANCES OF TELANGANA GOVERNMENT FOR WOMEN AND CHILD HEALTH CARE: A STEP TOWARDS A BRIGHTER FUTURE AND A BETTER SOCIETY**

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#### **ABSTRACT**

Women are the gifted heralds of mankind. From Margaret Hamilton, who coined the term whose algorithms sent mankind to moon to Katie Bauman who helped developing the first image of black hole, women always have been an important shade in the painting of mankind. The state of Telangana is the youngest state in Indian federation, established on 2<sup>nd</sup> June 2014, with bifurcation from united Andhra Pradesh. From 2014 the paper will analyze the progress made by the new state in women and child health care sector, from social, political and psychological perspective. This abstract provides a gist of the initiatives by the government of Telangana and the study aims at reviewing and analyzing the schemes and programs of the government of Telangana state for women and child health care. Being mindful of this attribute, the government of Telangana initiated several programs and schemes in favor of women and children of the state. One such approach towards this is the KCR Kit and Amma Odi. Both of these are welfare programs for women and children. Established on 3<sup>rd</sup> July 2017 the scheme has a budget of 500 crores annually. Every stage of pregnancy of a woman is tracked by the Aadhaar based Mother and Child tracking system (MCTS). The main objective of the program is to provide financial and medical assistance to the women undergoing delivery at any government hospital in any part of the state. Another nutritional program proposed is the “Aarogya Lakshmi” scheme which focuses its attention on health of pregnant and lactating women



and their children providing nutritional and dietary support to them through anganwadis. For unmarried girls, the government proposes the program of “Kalyana Lakshmi” where in the financial needs of unmarried girls are looked upon and a one-time financial assistance of 1,00,116 rupees is provided at the time of marriage and for the unmarried girls of minorities “Shaadi Mubarak” scheme has also been introduced. To keep women headfirst in every walk of society, “WE Hub” i.e. Women Entrepreneurs Hub has been introduced to ensure the financial independence of women. It cannot be denied that from the psychological point of view, providing women with knowledge, skill, opportunities and an improved lifestyle behavior leads to a positive relationship between physical and mental health. Health associated benefits are significant to human behavior. The physical and psychological well-being of women is directly tied to the wellness of the child and can be discerned through the policies and programs of Telangana government. Schemes aimed at the wellbeing of mother and child like Supplementary Nutrition Program (SNP Service), Bharosa, Streenidhi etc. by the Telangana state have led to a marked improvement in women and child health care.

**KEYWORDS:**

Women children, Telangana, Schemes, Welfare, Lifestyle Behavior, Positive Relationship, Psychology Wellbeing.



## NSHHSOP26

### BIOREMEDIATION OF WASTEWATER USING A PHOTOSYNTHETIC BACTERIAL ISOLATE

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#### ABSTRACT

Microbes especially bacteria have been found to play an important role in the remediation of wastewater and have garnered enormous attention in recent times. These bacteria have the ability to reduce the organic contents, removal of toxic chemicals and pathogenic microorganisms in the polluted water. The present research work involved the collection of wastewater samples from different locations of Hyderabad and analysed for physicochemical parameters. The waste water samples were inoculated with the photosynthetic bacterial isolate PB1 and then analyzed for parameters like pH, colour, nitrates, ammonia, chloride, fluoride, biological oxygen demand (BOD), chemical oxygen demand (COD), before and after using photosynthetic bacterial isolate for treatment. The results indicated that the bacterial isolate was efficient in decreasing chemicals levels as well as the BOD and COD levels. There was a great reduction in levels of nitrate using the bacterial isolate in both the water samples tested. Hence the bacterial isolate PB1 could be effectively used for treatment of wastewater effluents.



## NSHHSOP27

### EMERGING LETHAL ZONOSIS – NIPAH

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#### ABSTRACT

Nipah virus (NiV) is emerging zoonotic virus that causes severe and often lethal respiratory illness and encephalitis in humans. Nipah virus is a type of RNA virus of genus Henipa virus and belongs to the family Paramyxoviridae. The exact route of transmission in humans is not known, but the virus is normally known to circulate among specific types of fruit bats particularly species belonging to the Pteropus genus of the family Pteropodidae, the natural hosts for Nipah virus. The disease was first identified in 1998 during an outbreak in village named Kampung Sungai Nipah, Malaysia, while the virus was isolated in 1999. The incubation period for the infection is believed to range from 4 to 14 days. Human infections caused by Nipah (NiV) range from asymptomatic infection to acute respiratory infection, and fatal encephalitis. The symptoms of infection are fever, headache, myalgia, vomiting and sore throat, followed by dizziness, drowsiness, altered consciousness, and neurological signs that indicate acute encephalitis. The main laboratory diagnosis of NiV infection are Real Time Polymerase Chain Reaction (RT-PCR) from bodily fluids and Antibody (IgG and IgM) detection via Enzyme-Linked Immunosorbent Assay (ELISA). There are currently no drugs or vaccines specific for Nipah virus infection. Intensive supportive care is recommended to treat severe respiratory and neurologic complications.

#### KEYWORDS:

Fruit bats, lethal respiratory illness, Acute encephalitis, RT-PCR, ELISA.





## NSHHSOP28

### MARKET SURVEY OF ARTIFICIAL SWEETENERS AND ARTIFICIALLY SWEETENED PRODUCTS

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#### ABSTRACT

We owe the discovery of several artificial sweeteners to a few brave scientists who violated the code of laboratory hygiene and tasted their samples, often inadvertently. Saccharin, the oldest artificial sweetener, was discovered by Constantine Fahlberg at Johns Hopkins in 1879 while working on coal tar derivatives. For decades after its debut, saccharin remained a specialty product for diabetics on stores' medicinal shelves. (Artificial Sweeteners and the Neurobiology of sugar cravings, Qing Yang, 2010) A sugar shortage during World War II and shift of esthetics toward favoring a thin figure encouraged women to turn to artificial substitutes as well. Around this time, the wording on diet soda bottles subtly changed from “for use only in people who must limit sugar intake” to “for use in people who desire to limit sugar intake”. (Artificial Sweeteners and the Neurobiology of sugar cravings, Qing Yang, 2010) While people often choose “diet” or “light” products to lose weight, research studies suggest that artificial sweeteners may contribute to weight gain. (Artificial Sweeteners and the Neurobiology of sugar cravings, Qing Yang, 2010) The 4 most common artificial sweeteners used in food industry are: Aspartame, Acesulphame K2, Saccharin and Sucralose. ([www.nestle.in](http://www.nestle.in)) There are different sets of regulations for use of artificial sweeteners in different foods as per the FSSAI (Indian regulatory body). According to FOOD SAFETY AND STANDARDS (PACKAGING AND LABELLING) REGULATIONS, 2011, Every package of food which is permitted to contain artificial sweetener mentioned in table given in regulation 3.1.3 (1) of Food Safety and standards (Food Products standards and Food Additive) Regulations, 2011 and an advertisement for such food shall carry specific labels and declarations according to the type of artificial sweetener used in the product.

In accordance to this, all the FSSAI norms of labelling regulations for Artificial Sweeteners were listed out and a checklist was prepared to carry out the Market Survey on the Artificial sweeteners as Table-top sweeteners and the other





Artificially sweetened products. All the labelling regulations for various sweeteners were listed and compared to the products assessed and were scored according to the number of regulations followed.

The Market Survey involved two aspects: Finding out the various categories of artificially- sweetened products, available in the local market of Hyderabad and evaluating the abiding of Labelling Regulations given by the FSSAI. The products on evaluation were divided into 8 different categories, namely, Biscuits/Cookies and Chocolates; Sweets; Chewing gums; Lozenges; Beverages; Table top sweeteners; Supplements and Toothpastes and Mouthwashes 50 sugar-free/artificially sweetened product labels were assessed, including the various flavours of each product. It was found that, even the products that do not fall under the permitted foods' table given in regulation 3.1.3 (1) of Food Safety and standards (Food Products standards and Food Additive) Regulations, 2011, contained Artificial Sweeteners in them, without any declarations/labels which could be a concern of Food Safety. Supplements like Threptin Biscuits and Chyawan prash (Diabetic variant named Chyawan prakash) and Toothpastes and Mouthwashes were found to contain Artificial Sweeteners in them while they are not permitted for use in those products and as the consumer is unaware of the presence of them and the usage of artificial sweeteners through these products may pose a risk for the consumers. Although the toothpastes on usage might not be consumed directly by adults but since children usually tend to swallow them can be cause for concern. The major noticeable concern of the survey was the presence of Sodium Saccharin (artificial sweetener) in a lot of popular, including herbal-based toothpaste brands.

**KEYWORDS:**

Artificial sweeteners, Saccharin, Market Survey, FSSAI Toothpastes.



## NSHHSOP29

### AYURVEDIC MEDICINAL PLANTS IN PRIMARY HEALTH CARE

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#### ABSTRACT

The World Health Organization (WHO) Programme on Traditional Medicines encourages countries to identify aspects of traditional medicine that provide safe and effective remedies in primary health care. Traditional medicine should be incorporated into primary health care because many individuals already use medicinal plants in their day-to-day life. Herbal medicines could be an effective way to alleviate problems caused by the high demand and limited availability of modern medicines in primary health care. Nature has been always a source of medicinal agents for thousands of years and an impressive number of modern drugs have been isolated from natural sources, many of them based on their use in traditional medicine. Nearly all cultures, from ancient times to today, have used plants as a source of medicine. In many developing countries, traditional medicine is still the mainstay of health care, and most of the drugs and cures used, have originated from plants. Especially in India local people and tribals are using these traditional medicinal plants which cure diseases in their primary health care. In developed countries, many people are turning to herbal remedies, especially for minor ailments. Modern scientific medicine still depends on plants, and the knowledge gained from plants, for some essential drugs. Plants like *Tinospora cordifolia*, *Oscimum*, *Aloe vera*, *Gymnema* can be considered as wonder drugs based on their miraculous medicinal properties.

#### KEYWORDS:

Herbal remedies, Primary Health Care, Traditional medicine.