Community based
Environmental health initiatives

Presented by
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CO-ORDIDATOR, CENTRE FOR ENVIRONMENTAL STUDIES
Content

- Introduction
- Activities
  - Socio environmental base line survey
  - Awareness programme on “Environment and Health.”
  - UG major projects( Water and air quality )
  - Hands on training to women at Sellur (Preparation of paper bags)

Factors that promote and retard learning

Challenges to learning and teaching using service learning approach
Goal

To facilitate the faculty and students to apply their knowledge on Environmental Health to real life situation in a neighbouring community [Sellur]
Activities

- Socio environmental base line survey
- Awareness programme on “Environment and Health.”
- UG major projects (Water and air quality)
- Hands on training to women at Sellur (Preparation of paper bags)
Co-ordinators:
- Dr. Manorama Dhanaseeli, Associate Professor, Dept. of Botany & Microbiology
- Dr. Priscilla, Asst. Professor, Dept. of Zoology

Participants
- Students of Service Learning Program
- Faculty and students of Environmental Awareness Program
- Faculty and students of the elective course - ‘Human environment and Society’
- UG students of Science Departments and faculty guides
GEOMAPPING- IMAGE OF SELLUR AREA SELECTED FOR COMMUNITY PROJECT

( Done by Physics Major students of SLP)
SOCIO ENVIRONMENTAL BASE LINE SURVEY

Participants

Survey:
500 students of the elective course on ‘Human Environment and Society’ and course teachers

Analysis of data using SPSS software package:
III B.Sc. Students of Dept. Of Mathematics guided by a faculty
Survey conducted in Sellur (Sep. 2010)

- Nearly 1430 respondents were enquired.
- Data was collected based on their economic status, basic amenities, sanitation and drainage facilities and the prevalence of diseases in that area.
- The survey covered a total of 13 streets (Ahimsapuram 2nd, 3rd, 4th, 5th, 6th, 7th, 8th streets, Ahimsapuram Mella theru, Church street, Ayyanar Koil 5th street and Manavallan 3rd, 4th streets).
Most of the people in Sellur depend on corporation water and 40% of the respondents use unboiled water for drinking.
408 people use public toilets and 1001 people use house toilet and the remaining in open air. 348 houses have open drainage facility and 1082 have closed drainage.

The area was stinking and unclean.
365 people were affected by Chikungunya recently and 196 people had dental problems. The order of prevalence of diseases in Sellur was Chikungunya, Dental problems, Skin, Typhoid, Allergy, Malaria, Respiratory problems, Diarrheal, viral fever, Jaundice and tuberculosis.
669 people were interested in taking hands-on training in making value-added paper products.
Activity taken by III B.Sc. Chemistry students under service learning

1. Gave awareness to people at Sellur on
   - Segregation of degradable and non-biodegradable wastes
   - proper disposal of polythene bags and other solid wastes

2. Hands on training to interested women on ‘Making paper bags from old newspapers’
PARTICIPANTS

- T. SANGEETHA
- S. MANIMALA
- B. PAVITHRA
- G.T. NIRMALA
- T. SAKTHIBALA
- R. SARANYA
Improper disposal of Plastic bags in sewage canal at Sellur
TOOK SURVEY ABOUT PLASTIC BAGS USAGE IN THEIR DAILY LIFE
Students were trained to make paper bags using newspaper.

Women in Sellur area were given hands on training in making paper bags.

Chemistry students getting training from Botany students in making paper bags.
PAPER BAGS MADE BY STUDENTS/ WOMEN AT SELLUR
AWARENESS PROGRAMME ON ‘ENVIRONMENT AND HEALTH’

Place: MANOHARA MIDDLE SCHOOL, SELLUR

Highlights:
- Nutrition and health
- Human Diseases (deficiency diseases, vector borne diseases)
- Pollution and Global warming
- Waste management

Beneficiaries: 3000 school students from Sellur
Participants: 100 Students of Environment Awareness Programme, LDC
AWARENESS EXHIBITION ON ‘ENVIRONMENT & HEALTH’
PHYSICO-CHEMICAL ANALYSIS OF DRINKING WATER AT SELLUR (UG MAJOR PROJECT)

Student participants

1. V.M.Abinaya
2. R.M.Abinaya
3. M.Anitha
4. V.Banu
5. K.Dhanapriya
6. D.Kavitha
7. K.Santhiya Esther
Objective

- To evaluate the Quality of drinking water supplied to the Sellur community based on the physico-chemical parameters.
Parameters analyzed using water analysis kits

- Total alkalinity
- Total pH
- Phosphate
- Iron
- Calcium hardness
- Total hardness
- Residual chlorine
- Chloride
- Fluoride
- Nitrate
- Nitrite
- Ammonium
## Results

<table>
<thead>
<tr>
<th>s. no</th>
<th>Estimation</th>
<th>A-1b</th>
<th>A-1c</th>
<th>A-2</th>
<th>A-3</th>
<th>A-4</th>
<th>A-5</th>
<th>A-6</th>
<th>A-7</th>
<th>A-8</th>
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<td>265</td>
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<tr>
<td>6.</td>
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<td>0</td>
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<td>11.</td>
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<td>12.</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>
Results

1. All samples were within the permissible limit of alkalinity

2. Iron was absent in all the samples.

3. All samples were deficit in Calcium hardness and Total hardness.

4. Phosphate was absent in all the samples except the sample from Ahimsapuram 4th street.

5. Fluoride was absent in all the samples (permissible limit 1 – 1.5 ppm)
6. All samples contained Chloride within the permissible limit (0 – 250 ppm)

7. Residual chlorine was absent in all the samples (permissible limit 0.2– 0.5 ppm)

8. Nitrate was absent in all the samples except the sample from A1 b which has 5 ppm Nitrate (limit 0– 45 ppm)

9. Nitrite was absent in all the samples except sample A-6, A-7 & A-8 which have 0.5 ppm Nitrite (permissible limit 0 – 10 ppm)

10. Ammonium was absent in all the samples.
BACTERIOLOGICAL EXAMINATION OF DRINKING WATER FOR POTABILITY AT SELLUR, MADURAI.

L. RAJAGURU
S. SHYLA
J. SOWMIYA
(III B.Sc., Botany)

AMY PAVITHRA D.
(III B.Sc., Zoology)
OBJECTIVES

- To determine the presence of coliform bacteria in water samples.
- Obtain an index indicating the possible number of organisms present in the sample under analysis.
- To determine the potability of water using standard qualitative and quantitative procedures.
Why this study?

- Water that is safe to drink is free of disease producing microorganisms and chemical substances harmful to health and is called potable water.

- Water can endanger health and life if it contains pathogenic microorganisms most frequently transmitted through water are those which cause infection of the intestinal tract (typhoid fever, shigellosis, cholera, campylobacteriosis, viral enteritis and amoebiasis).
Materials and methods

- Drinking water collected from 13 selected streets of Sellur and were subjected to standard procedures.
# IMViC TEST

<table>
<thead>
<tr>
<th>ORGANISM</th>
<th>INDOLE</th>
<th>METHYL RED</th>
<th>VOGES PROSKAUER</th>
<th>CITRATE TEST</th>
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<tr>
<td><em>Escherichia coli</em></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>Enterobacter aerogenes</em></td>
<td>-</td>
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<td>+</td>
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</table>
RESULTS

- *E. coli* is a normal flora present in our intestine and it will be present in fecal matter. So it is used as an indicator organism to detect the potability of water.

- *E. coli* were present in the water samples collected from four streets (1 Ahimsapuram -1, Ahimsapuram -2, Ahimsapuram -5 and Ahimsapuram-6)
A STUDY ON THE AIR MYCOFLORA AT THE SELECTED STREETS OF SELLUR, MADURAI.

P. Jayapriya
S. Mahalakshmi
F. Shamimbanu
(III B.Sc. Botany)
OBJECTIVES

With a view to study the level of fungal contamination at Sellur, the present study was undertaken with the following objectives.

- To isolate and identify the outdoor air mycoflora in selected streets of Sellur.
- To find out the spore types prevalent in the area.
METHODOLOGY

The mycoflora of air was studied by Exposure plate method using Rose Bengal Agar (RBA) medium. The no. of colonies formed in the plates and the fungal types obtained were observed.
# NUMBER OF FUNGAL COLONIES FOUND IN THE SELECTED STREETS OF SELLUR

<table>
<thead>
<tr>
<th>Street</th>
<th>Total no of colonies</th>
<th>Asp</th>
<th>Alt</th>
<th>Clad</th>
<th>Cur</th>
<th>Muc</th>
<th>Peni</th>
<th>Trich</th>
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<td></td>
<td>Dec</td>
<td>Jan</td>
<td>Dec</td>
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<td>Dec</td>
<td>Jan</td>
<td>Dec</td>
<td>Jan</td>
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<td>Ahim I</td>
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<td>9</td>
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<tr>
<td>II</td>
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<td>6</td>
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<td>8</td>
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<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
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<td>Mana 3rd</td>
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<td>1</td>
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<td>4th</td>
<td>6</td>
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<td>5</td>
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<td>2</td>
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<td>Melatheru</td>
<td>19</td>
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<td>5</td>
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</tr>
<tr>
<td>Iyanar Kovil</td>
<td>21</td>
<td>12</td>
<td>14</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>
DECEMBER MONTH EXPOSURE
JANUARY MONTH EXPOSURE- 2011
Fungal spore types observed:

- Aspergillus
- Cladosporium
- Mucor
- Penicillium
- Curvularia
RESULTS

- There is a rich fungal biodiversity in outdoor air of Sellur.
- Maximum numbers of fungal colonies were observed in the atmospheric air of church Street and Iyanar kovil street.
- Minimum number of fungal colonies were observed in the atmosphere air of Ahimsapuram III and Manavalan IV street.
- Maximum numbers of colonies were obtained in the month of December than January.
Reflections

- Apply their knowledge to promote quality of life in the neighborhood
- Learn to make models, display and explain during awareness program
- Learn to interact with people and know the realities of life
- Learn to do environment related projects and find the problems prevailing in the selected community
- Take an attempt to bring changes through proper channel for solving the problems
Factors that promote learning

- Motivation
- Interest created in the field of study
- Attitude of the students to serve the community
- Clarity in the work plan
- Better understanding of their subject for immediate application
- Adequate financial assistance to carry out the community work
- Appreciation
- Recognition of their work
Factors that retard learning

- Lack of interest and motivation
- Reluctance to do community service
- Hesitation to meet people
- Restriction from the family for security reasons
- Fear to take challenges and risks
- Difficulty in winning the confidence of the community
Challenges to learning and teaching using service learning approach

Challenges to learners

- Identifying the possibilities of applying the acquired knowledge to the community
- Realizing and appreciating their own life situations
- Developing the skills required to work with the community
- Sharing of the resources and expert ices with the needy.
Challenges to learning and teaching using service learning approach - Contd...

Challenges to facilitators

- Willingness to walk an extra mile along with the learner and the community
- Motivating the learners and colleagues for a team work
- Systematic planning and meticulous execution
- Effective approach to governmental and non governmental agencies for collaborative community work
- Overcoming obstacles in the execution of the service .
- Creating a perfect document on the programme.
Acknowledgement

Our heartfelt thanks are due to

- UB for providing financial support to carry out the project
- Dr. A. Mercy Pushpalatha, Principal, for her motivation, support and valuable suggestions
- Mr. Jeyakumar, Headmaster, Manohara School, for providing facilities for the conduct of Awareness Exhibition
- Faculty & Student participants for their active participation and cooperation
Thank You