

Best Practice-I

1. **Title of Practice** “Soil-less Rooftop Organic Farming”
2. **Goal:** To provide low cost eco-friendly farming, an alternative to retrench agricultural land.
3. **The context:** The agriculturists in India are facing a big problem of supplying food to ever increasing population as agricultural land is decreasing due to fast growing urbanization and industrialization. The food we consume is contaminated due to extensive use of pesticides/insecticides/chemical fertilizers. The quality of soil is also degraded. These problems need to be addressed. An alternative solution to overcome above problems is the Soil-less Rooftop Organic Farming, wherein use of vermicompost and harmless biopesticides are promoted.
4. **The practice:** Staff & students of the college initiated the concept of Roof-top Organic Farming. 9’ X 6’ feet container is designed with underlying polymer sheets. Coco-peat and vermicompost is added in the peat in 60:40 ratios with addition of 1 kg azoato-bactor and 1 kg neem powder. New type of CSIS irrigation system containing central pipe and four crossed pipe at sub-surface region is used. Green nets are provided over the kits. During rainy season, it is further covered with plastic sheets. The ideas are derived from green house. The attributes of green house are inculcated in this practice. All small rooted crops can be cultivated such as chillis, brinjal, tomato, spinach, corriender, fenugreek, cucumber, bitter gourd, cabbage etc.
5. **Evidence of Success:** Students participated in 5th Indian Youth Science Congress Kolkata and 6th Indian Youth Science Congress, Guntur (A.P.), where the project on “Soil-less Roof Top Organic Farming” was selected as 3rd most relevant innovation to solve zero hunger challenge at national level.
The vegetables produced through this best practice are sold to the staff member and nearby locality and also used in girls’ hostel mess.
Prof. M. S. Swaminathan, father of green revolution visited the college and appreciated the project.
Our students of B. Sc. Biotechnology have developed the further technology called Hydroponic-Organic roof top farming, which is cost effective as compared to conventional Soil-less Roof Top Organic Farming. This project was displayed at Raman Science Centre, Nagpur.
6. **Problems encountered and resources required:**
Polymer sheets, Coco-peat, vermicompost, azoato-bactor, neem powder, CSIS irrigation system, pipes, Green nets and plastic sheets.
7. **Notes:** The source of this project is available in the form of CD, Print-Media.
Expertise on this project is available. The various News Channels and Print Media made this concept of “Soil-less Roof Top Organic Farming” popular.

Links: www.youtube.com/watch?v=Ng3hsRZ16ts

<http://www.nagpurtoday.in/roof-top-organic-farming-an-a-unique-initiative-by-the-students-of-shivaji-science/02032152>

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2. Best Practice-II

1. **Title of the practice :** Residential Camp on “An Awareness About Future In Basic Sciences”

2. **Goal:** The goal of the residential camp is to encourage brilliant students to take up basic sciences as career, to inculcate culture of science among new generation, to encourage them to carry out research in basic sciences and to expose them to new avenues and related career opportunities.

3. **The context:**

The college has great potential and provides many career opportunities to the students. However, the present scenario depicts that the best brain go to medical and engineering streams and other professional courses. Therefore it is necessary to encourage young talent to take up science as career.

In order to motivate young and enthusiastic brains in the field of research, Department of Science and Technology, New Delhi sponsored an awareness programme-Innovation in Science Pursuit for Inspired Research (INSPIRE) for the students.

The college is a premier institute in Central India and has potential to attract brilliant students in and around the region. To materialize the goal, the college organizes residential camp on *Awareness about future in basic sciences* every year since 2012.

4. **The practice:**

It is a regular practice in the college since 2012 to organize a residential camp *on An awareness about future in Basic Sciences*. This practice helps to attract the brilliant students to seek admission in U G Programme of basic sciences.

The aim of the residential camp is

- To make the basic sciences more interesting
- To familiarize students with the concepts and innovations in science
- To create awareness among the students regarding various career opportunities
- To motivate the students for research career in basic sciences.

Duration of this residential camp is of five days in which 70% lectures and demonstrations are pertaining to *disciplinary content* in Physics, Mathematics, Chemistry, Biology and Earth sciences which emphasize key concepts while 30% lectures and demonstrations highlight the features of interdisciplinary approach.

The lectures and demonstrations/experiments/field visit are focused on various themes such as Energy, Earth, Environment, Wildlife conservation, India’s Moon mission, Epidemic diseases, Unknown domains of science, Research and career opportunities etc.

The college provides registration kit containing list of mentors, resource persons, their affiliation, name of topic and contact number of local persons.

The college also provides T-shirts, caps, transportation facility, accommodation, local hospitality, certificate of participation, science books, prizes and home experimental kit.

The students have opportunity to interact with renowned academicians, distinguished researchers and eminent scientists of national and international repute.

The other academic activities carried out in the workshop are CD shows, discussions, experiment sessions, seminars, science quiz, sky watching programme and field visits.

Feedback about the workshop is collected from mentors and students.

The details of the residential camps organised by the college is given below.

5. **Evidence of Success:**

Around 565 students are benefitted from three residential INSPIRE camps.

The INSPIRE scholarship instituted by DST to the tune of Rs. 80, 000/- per student per year has been awarded to eight students of this college. More students are motivated to make career in basic sciences. This is quite visible from the fact that the students with good percentage and the students from lower strata of society seek admissions for basic sciences. The students became more confident in presentation of their work in the form of model, paper, quiz competition etc.

The residential camp encourages the students to take up careers in science.

6. **Problems encountered and Resources required:**

Brilliant students are inclined towards professional studies since they are unaware of the avenues in pure sciences.

Technology oriented teachers, sincere students, spacious auditorium, well-equipped laboratories, ICT facility, renowned resource persons/ academicians /mentors with social commitment, distinguished researchers and eminent scientists of national and international repute.

7. **Notes:**

Such camps help to develop Research and Development activities in basic sciences.

These activities elevate the thinking process among the stakeholders.

Print media has given a wide coverage to the deliberations of distinguished researchers and eminent scientists during the INSPIRE camp.

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