

Shri Shivaji Education Society Amravati's SCIENCE COLLEGE, Congress Nagar, Nagpur
DEPARTMENT OF BOTANY
Conducted Project on
HYDROPONICS
Session 2023-24



Shri Shivaji Education Society Amravati's
SCIENCE COLLEGE

Congress Nagar, Nagpur - 440012 (M.S.) India.
Accredited With CGPA Of 3.51 At 'A+' Grade.



BOTANY DEPARTMENT
Organizing
Project on
HYDROPONICS
SESSION 2023-24

Our aim is to equip students with modern agricultural skills and promote affordable hydroponic solutions for landless farmers and regions facing soil and water scarcity.

What is Hydroponics?

- A soilless farming technique where plants are grown in nutrient-rich water, without the need for soil.
- Allows cultivation of crops in limited spaces, utilizing vertical farming and controlled environments.

Why Hydroponics?

- Hydroponics is a soil-free farming method that allows crops to grow in nutrient-rich water. It's ideal for urban spaces, using 90% less water and producing crops 30-50% faster. With fewer pests, it reduces the need for chemicals, offering a sustainable and efficient farming solution.

Benefits for Students

- Practical Knowledge
- Entrepreneurship Opportunities
- Environmental Impact

Project Highlights



Objective:

To raise awareness among students on sustainable, soilless farming practices and the potential for year-round crop production.



Scope

Introduction to various hydroponic systems, nutrient solutions, and crop cultivation methods.



Hands-on Training

Students participated in setting up small-scale hydroponic systems for growing vegetables and herbs.

JOIN US IN REVOLUTIONIZING AGRICULTURE!

Contact :
Department of Botany,
Shri Shivaji Science College, Congress Nagar, Nagpur.

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REPORT

Hydroponics is a method of cultivating plants using a nutrient-rich water solution instead of soil. In this system, plant roots are immersed in a liquid nutrient solution, which is crucial for their healthy growth, resulting in faster and larger plants.

The Department of Botany at Shivaji Science College, Nagpur, conducted a project on “Hydroponics” under the supervision of Prof. R. N. Deshmukh, Head and Project Coordinator, and Dr. R. H. Mahakhode, Co-Coordinator for B.Sc. students during the academic session 2023-24. Ten students actively participated in this project, which was carried out on the terrace of the ‘C’ block. The hydroponics system used was based on the NFT (Nutrient Film Technique). Various plants, including Spinach, Broccoli, Red Amaranths, Mint, Basil, and Cabbage were selected for the study. This technique required fresh water, oxygen, nutrients, root support, and light. Students prepared the nutrient solution and used materials like coco coir, perlite, vermiculite, and clay pellets. They observed the plant growth weekly. Many vegetable crops, such as basil, cabbage, mint, broccoli, and lettuce, were cultivated through hydroponic farming.

Hydroponic farming can be practiced anywhere, offering higher yields with fewer resources. The advantages include higher crop yields, increased plant density, reduced water waste, lower investment costs, less space requirement, and being pathogen-free. Hydroponic farming also provides employment, skill development, and affordable organic farming opportunities for the younger generation. The students started this project in August and continued until February, harvesting multiple crops. They learned how to grow more plants in less space compared to traditional outdoor gardening.

Dr. Lanjewar, Dr. Lonare and students of Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital; Wanadongari - Waddhamna Road, Hingna, Dist Nagpur

visited “Hydroponics” project on 28th December 2023. Staff and students of Nikalas Mahila Mahavidyalaya, Nagpur, visited “Hydroponics” project on 13th March 2024.



Dr. Lanjewar, Dr. Lonare of Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital; Wanadongari - Waddhamna Road, Hingna, Dist Nagpur visited “Hydroponics” project on 28th December 2023



Staff and students of Nikalas Mahila Mahavidyalaya, Nagpur, visited “Hydroponics” project on 13th March 2024.

Students' set-up small scale HYDROPONICS system



Preparation of Nutrients and Coco peat



Cultivation of vegetables and herbs through Hydroponics system



Mahakhode

Dr. R.H. Mahakhode
Project Co-Coordinator

Berry

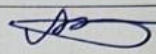
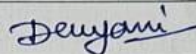
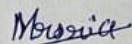

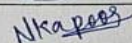
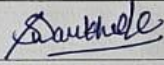
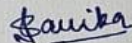

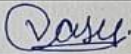
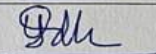
Prof. R.N. Deshmukh
Project Coordinator

Shri Shivaji Education Society Amravati's SCIENCE COLLEGE, Congress Nagar, Nagpur.

DEPARTMENT OF BOTANY

Conducted Project on
HYDROPONICS

Session 2023-2024

Sr. No.	Name of Students	Signature
1	Avanti Zadgaonkar	
2	Devyani Walke	
3	Madhavi Roria	
4	Minal Bisen	
5	Nandini Kapoor	
6	Samiksha Wankhede	
7	Sanika Raut	
8	Smita Samrit	
9	Vasu Madekar	
10	Yash Dorle	



Dr. R.H. Mahakhode
Project Co-Coordinator



Prof. R.N. Deshmukh
Project Coordinator

ACTION TAKEN REPORT

The Department of Botany, Shri Shivaji Science College, Congress Nagar, Nagpur, conducted a 'Hydroponic' project during the session 2023-2024 under the guidance of Prof. R.N. Deshmukh, Head & Project Coordinator and Dr. R.H. Mahakhode, Project Co-Coordinator with Ten B.Sc. students actively participating. The project, carried out on the terrace of the 'C' block, utilized the Nutrient Film Technique (NFT) to grow plants like Spinach, Broccoli, Red Amaranths, Mint, Basil, and Cabbage.

Students prepared nutrient solutions and used materials such as coco coir, perlite, vermiculite, and clay pellets for root support. The project demonstrated the benefits of hydroponic farming, including higher yields, reduced water waste, and efficient use of space. Weekly plant growth observations were made, and students successfully cultivated several crops between August 2023 to February 2024. The project also attracted visitors, including Dr. Lanjewar, Dr. Lonare, and students from Swargiya Dadasaheb Kalmegh Smruti Dental College on December 28, 2023, as well as staff and students from Nikalas Mahila Mahavidyalaya on March 13, 2024.

FEEDBACK QUESTIONS

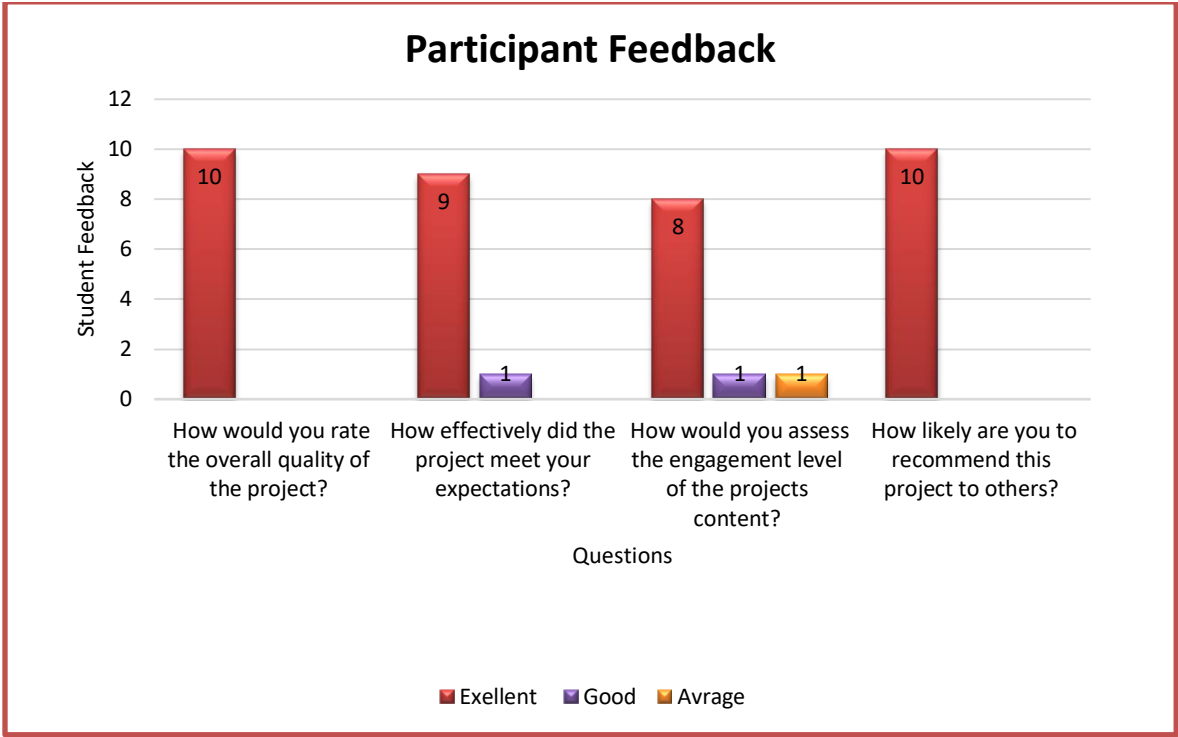
- 1) How would you rate the overall quality of the project?
{Good / Better / Average}
- 2) How effectively did the project meet your expectations?
{Good / Better / Average}
- 3) How would you assess the engagement level of the projects content?
{Good / Better / Average}
- 4) How likely are you to recommend this project to others?
{Good / Better / Average}



Dr. R.H. Mahakhode
Project Co-Coordinator



Prof. R.N. Deshmukh
Project Coordinator



R.H. Mahakhode

Dr. R.H. Mahakhode
Project Co-Coordinator

R.N. Deshmukh

Prof. R.N. Deshmukh
Project Coordinator

R.H. Mahakhode

Signature of IQAC Coordinator
Internal Quality Assurance Cell
(IQAC)

S. S. E. S. A. Science College
Congress Nagar, Nagpur



R.N. Deshmukh

Signature of Principal
Principal
S. S. E. S. Amravati's
Science College, Nagpur.