

# Centre for Research

## Maitreyi College, University of Delhi

### SUMMER INTERNSHIP PROGRAMME, 2020 - 2021

The year 2021 began with a steep increase in COVID cases around the world, and the second wave shattered many dreams and hopes of a normalized life. We were once again left with the cycle of everything being online and the internet being our greatest ally. However, the intensive interest in learning and research did not decrease despite the outbreak and lockdowns. As part of Summer Internship Program, SIP 2020-21

, **30 research projects** were performed from **April 25, 2021 to June 24, 2021**. A total of **38** faculty members and **90** students were involved in these projects. External experts from different Universities such Cotton University, Assam, IGNOU, Sharda University, University of Lucknow etc., evaluated all the project reports, as is our standard approach. Based on the review, selected projects were presented before external jury members on **October 5, 21 and 26, 2021**. The projects were presented in online mode and the projects titled **‘To monitor the growth of plants using bio-organic approach for Sustainable agriculture’**, **‘An Integrative Approach towards Recommending Farming Solutions for Sustainable Agriculture’** and **‘Interrogating the idea of ‘sustainable culture’ and its impact in India’** were judged the best projects for the respective days.

## Glimpse of the Presentations of the Summer Internship Projects 2020-21

The image displays two screenshots from a Zoom meeting. The top screenshot shows a presentation slide titled "Results" with a bar chart and a list of items. The bottom screenshot shows a presentation slide titled "Sustainable agriculture" with bullet points and images of agricultural fields. Both screenshots show a grid of participants in the background and a list of participants on the right side of the screen.

**Participants (63)**

- 1722 Rupika Gaba (Co-host)
- Kamakshi Upreti (Host)
- Charu Gupta (Co-host)
- 005 Chem Prochi (Co-host)
- 1387Garima Verma (Co-host)
- 1467 Kanika Gandhi (Co-host)
- 1594\_Urvashi Joon\_C\_ (Co-host)
- 1722 Rupika Gaba (Co-host)
- Akanksha Rai (Co-host)
- Brototi Roy (Co-host)
- Devangana Jha (Co-host)

**Results**

- 1. Sustainable agriculture and Chemical agriculture
- 2. Sustainable agriculture and Traditional agriculture
- 3. Sustainable agriculture and Organic agriculture
- 4. Sustainable agriculture and Modern agriculture
- 5. Sustainable agriculture and Smart agriculture
- 6. Sustainable agriculture and Precision agriculture
- 7. Sustainable agriculture and Data driven agriculture
- 8. Sustainable agriculture and AI driven agriculture
- 9. Sustainable agriculture and Robotics driven agriculture
- 10. Sustainable agriculture and Nanotechnology driven agriculture

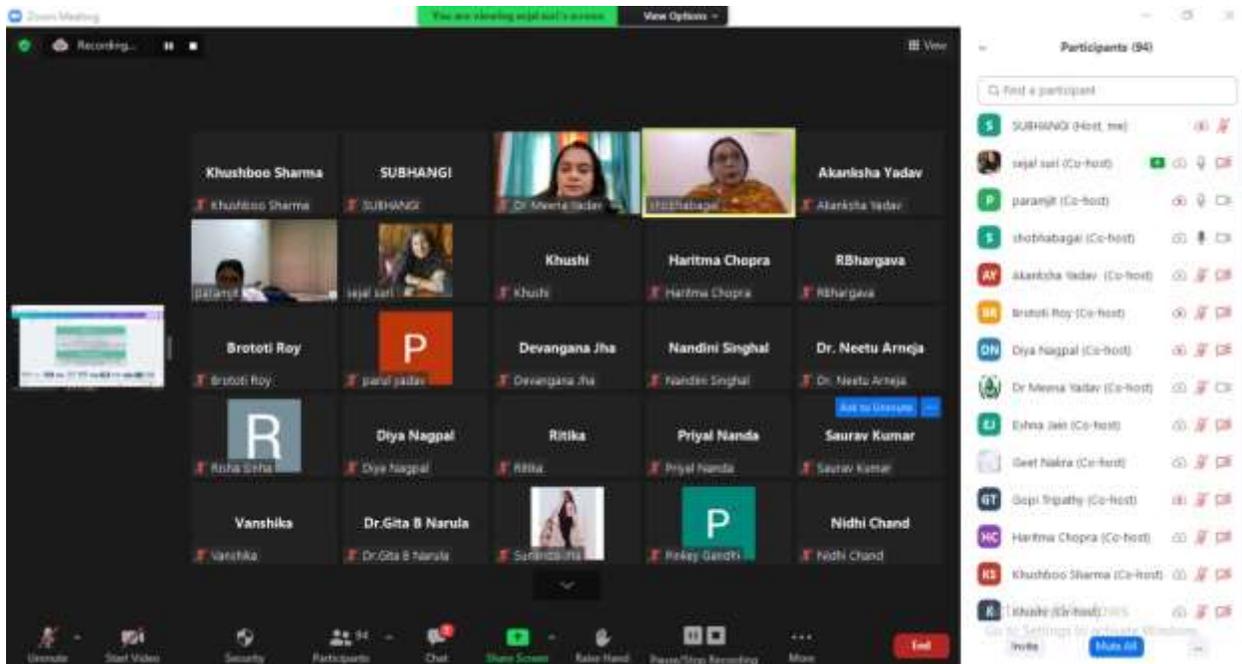
**Sustainable agriculture**

- Sustainable agriculture and Chemical agriculture
- Sustainable agriculture and Traditional agriculture

**Participants (63)**

- Rupika Gaba (Host, me)
- Pratiksha an... (Co-host)
- Amrita Yadav 19/... (Co-host)
- Amrita Yadav 18... (Co-host)
- Anjak Sharma (Co-host)
- Brototi Roy (Co-host)
- Devangana Jha (Co-host)
- Dr. Meena Yadav (Co-host)
- gopi (Co-host)
- Haritma Chopra (Co-host)
- Kamakshi Upreti (Co-host)
- Muskan Shrivastha (Co-host)
- panal jastav (Co-host)
- Prof. Anil K. Anaja (Co-host)





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1. **Precision farming** refers to the usage of highly specific modern technologies in order to boost yield and productivity of various crops. Includes: GPS, Remote sensing, VRT.
2. **Vertical farming** refers to the practice of growing crops with focus of optimizing the space used. It includes soilless farming techniques like hydroponics and aquaponics.
3. **Organic farming** is usage of organic material as agricultural aids (such as manure, compost, naturally occurring pesticides like rotenone). It reduces use of harmful synthetic fertilizers and pesticides which may cause pollution and harm to the environment.

**Precision agriculture:**

**Vertical farming**

Hydroponics

Aquaponics

**ORGANIC FARMING**

Practices

Benefits

**Prashansha's screen**

## Projects carried out under Summer Internship Programme, 2020-21

SN	Code	Title of proposal	Dept.	Mentors	Mentees
1	SIP20-21/01	An Insight into Application of Land Use Land Cover Analysis towards Sustainable Agriculture within Jhajjar district)	Botany	Dr. Pooja Baweja Ms. Priyadarshini Singh	Jyoti Singh, Neha, Mansi (Bot Hons 2nd yr); Isha Arya (Bot Hons 1st yr)
2	SIP20-21/02	In-silico study of Pesticides for the binding of Calyx of Bovine $\beta$ -Lactoglobulin	Chemistry	Dr Lata vodwal and Dr Durgesh Kumar	Tanishka Pal, Ritika Khanna (Ls 2nd yr); Kirti, Rishika Arya (LS 2nd yr)
3	SIP20-21/03	Functionalized nano biopolymer for designing of sustainable crop protection formulations	Chemistry	Dr Gazala Ruhi, Dr Hema Bhandari and Dr Rajni Johar	Riya Nimbekar, Sakshi Maam, Sakshi Rajain, Leesha, Diksha, Rupa Adhikari (Chem Hons)
4	SIP20-21/04	Optimizing The Consumption Of Products Of Petroleum Industry: An Approach Towards Agricultural Sustainability	Commerce	Dr Sonal Babbar	Vaishnavi Rastogi, Khushi[1], Bhawna Saini
5	SIP20-21/05	Food Security, Sustainability and Markets: Understanding the Protest of Farmers against Laws	Commerce	Dr. Saroj Rani	Soumyata Katiyar and Shaivy Pulak (BA P 1st yr)
6	SIP20-21/06	Exploring the sustainable future of Handlooms : A	Commerce	Ms. Kritika Khurana	Nandika Monga and Vani Shukla (B.com Honours, 2 nd year)

		dive into its raw materials market, exports, growth and prospects			
7	SIP20-21/07	WOMEN EMPOWERMENT AND SUSTAINABLE AGRICULTURE : SYNERGIES AND MISSING Links	Economics	MS. NIDHI CHAND	SEJAL SURI, AKANKSHA YADAV (Eco Hons 1st yr)
8	SIP20-21/08	Organic Farming and Sustainable Development	Economics	N. Shradha Varma	Sagarika Rastogi and Perna Agarwal (Eco Hons 1st yr)
9	SIP20-21/09	Indigenous knowledge, new age modernism to achieve sustainable agriculture and its impact on farmers	Economics	N. Shradha Varma	Diya Nagpal and Risha Sinha( 1st year- B.A Hons Economics)
10	SIP20-21/10	Implementation Gaps in Sustainable Agriculture: An Analysis of the Indian States Uttar Pradesh and Bihar)	Economics	N. Shradha Varma	Nandini and Jigisha Sharma (Eco Hons 1st yr)
11	SIP20-21/11	<i>Rebound agriculture - Traditional techniques for contemporary needs</i>	Economics	N. Shradha Varma	Geet Nakra and Yashita Srivastava; Eco Hons 1st yr
12	SIP20-21/12	ECONOMIC CHALLENGES IN WIDE-SCALE ADOPTION OF SUSTAINABLE AGRICULTURAL PRACTICES IN INDIA	Economics	Ms Devangana Jha;	Vaanya Bhalla And Nandini Singhal; Eco Hons 1st yr

13	SIP20-21/13	Socio - Economic Issues of Sustainable Agriculture in India	Economics + Sociology (Interdisciplinary)	Dr. Priti Mendiratta Arora and Dr. Aruna Grover	Vanshika Gulia and Laxmi Kumari Mahato (BA Prog); Pooja and Ritika Choudhary BA (H) Sociology 1st year
14	SIP20-21/14	The Impact of APMC Amendment Act on Agribusiness and Farmers' Welfare)	Economics	preeti mendiratta	Eshna Jain and Priyal Nanda
15	SIP20-21/15	Recognition of the Role of Agriculture in Assamese Society: A Study of Culture, Folklore and Cinema	English	Dr Richa Chilana	Debangi Kashyap, Pratikshya Parashar (Eng Hons 2nd yr)
16	SIP20-21/16	Women in Premchand's Rural Settings: Negotiating Tradition and Modernity	English	Dr Richa Chilana (rchilana@maitreyi.du.ac.in)	Riya Arora and Anjali Sharma (Eng Hons 2nd yr)
17	SIP20-21/17	Sustainable Production of Rice in West Bengal: A Mathematical Model of Rice Growth)	Maths	Dr. Neetu Arneja , Mr. Saurav Kumar	Anmoldeep, Sunidhi Chadha, Saloni, Sunanda (Maths 1st & 2nd yr)
18	SIP20-21/18	Synthesis And Testing Of Structured Water For Sustained Agriculture	Physics	Dr. Parul Yadav, Dr Shalini Lumb Talwar	Ms. Gunjan, Ms. Bhawna, Ms. Neha (Phy Hons 2nd year); Ms. Rishika Mittal (Phy Hons 1st yr)
19	SIP20-21/19	Design of Hydroponics system using Arduino to monitor physical parameters required for plants growth	Physics	Dr. Parul Yadav Dr. Mansi Dhingra,	Vishakha (Phy Hons 3rd yr); Sneha 2 , Ms. Vaishali 2 , Ms. Pranshi (Phy Hons 2nd yr)

20	SIP20-21/20	Aquaponics- A Method Towards Sustainable Agriculture	Physics	Dr. Prajwalit Shikha	Simrat Kaur (1652) : B.Sc.(H) Physics- I Year (Sem-II); Khushi Poonia and Anchal Pandey (Phy 2nd yr)
21	SIP20-21/21	Vedic Farming: A Boon to Indian Agriculture	Sanskrit	Dr Rekha Kumari;	Niharika Khurana; BA Hons Sanskrit 2nd yr
22	SIP20-21/22	Interrogating the idea of 'sustainable culture' and its impact in India	Sociology	Dr Rashi Bhargava;	Amrata Yadav and Muskan Shrestha; BA prog 2nd yr
23	SIP20-21/23	Sustainable agriculture and irrigation methods. -a case study of Kangra district, Himachal Pradesh, India.	Sociology	Mr Pawan Harsana	Sanyukti Dewan and Sneh Thappa
24	SIP20-21/24	Minimum Support Price Conundrum and Sustainable Farming: a study of the impact of socio-economic factors on sustainable agriculture	Sociology	Mr Pawan Harsana	Vanshika and Sanjana (Socio Hons 1st yr)
25	SIP20-21/25	Modern technologies for sustainable agriculture and their reach up to farmers ( <b>New Title: Review Based Analysis of Modern Farming in Sustainable Agriculture</b> )	Zoology	Dr Luni and Dr Tejendra Kumar	Megha Lakhera, priya (LS 3rd yr); Versha Aggarwal (zoo hons 1st yr); Prashansa (LS 1st yr)
26	SIP20-21/26	<b>Ladybird beetles as biocontrol agents: their contribution in sustainable</b>	Zoology	Dr Meena Yadav	Anshu Rana and Garima; Zoology Hons 2nd yr

		<b>agriculture sustainable agriculture</b>			
27	SIP20-21/27	To monitor the growth of plants using bio-organic approach for Sustainable agriculture	Interdisciplinary (Chemistry and Botany)	Dr. Kiran Soni , Dr. Gita Batra Narula, Dr. Alka B Vadakan, Dr. Shweta Sharma,	Perna Notnani, Kanika Gandhi, Richa Agarwal, Urvashi Joon, Nancy Ghai, Prachi (Chem Hons 1st & 2nd yr)
28	SIP20-21/28	IoT-based smart farming for sustainable agriculture in India	Interdisciplinary (Maths & Comp Sci)	Ms. Geetan Manchanda and Dr. Shikha Badhani	Aadi Lochab and Bhumika Papnai (B.Sc (H) Maths IV Sem)
29	SIP20-21/29	<b>“Polymeric ‘Smart Nuribots’ for Sustainable Aquaponics Agriculture”</b>	Interdisciplinary (Chemistry**+ Botany)	Dr. Swarndeeep Kaur Sethi; Dr Kiran soni and Dr Geeta Batra Narula, Dr Pooja Baweja	Shweta Tiwari, Swarnali Panda, Charu Gupta, Shivangi Saini (chem hons 3rd yr); Divya Bisht (chem 1st yr); Padmaakshi Chakravartty, Rupika Gaba,
30	SIP20-21/30	An Integrative Approach towards Recommending Farming Solutions for Sustainable Agriculture	Interdisciplinary (Comp sci + Economics)	Dr Veena Ghuriani & Dr Jyotsna Talreja Wassan	Pragya Deolal (BA P 3rd yr); Vidushi Sharma,Dimpy Dalal, Aditi Goyal, (BA Eco 2nd yr);