

Activity Report
Of
**Three-Day National Workshop on "Empowering Beginners:
Hands-on Training in Plant Genome Editing Tools**

Organized by
**Department of Biotechnology, and Research Development Cell (RDC),
CUH**

Submitted By
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19-11-2025

U. Sangwan 19/11/2025

Activity Report

Three-Day National Workshop on “Empowering Beginners: Hands-on Training in Plant Genome Editing Tools”

Organised by: Department of Biotechnology & Research Development Cell (RDC)

Venue: Central University of Haryana (CUH), Mahendergarh

Dates: 17–19 November 2025

1. Introduction

The Department of Biotechnology, in collaboration with the Research Development Cell (RDC), Central University of Haryana, organised a **three-day national workshop titled “Empowering Beginners: Hands-on Training in Plant Genome Editing Tools”** from **17th to 19th November 2025**. The workshop aimed to introduce young researchers to the fundamentals and practical aspects of plant genome editing, especially CRISPR-Cas9 technology, bridging the gap between theoretical understanding and laboratory application.

A total of **30 students from various states across India**—including Kerala, Uttar Pradesh, Maharashtra, Delhi, Odisha, Rajasthan, and Haryana—were selected for this hands-on training program. Their participation reflected growing national interest in advanced molecular breeding and genome engineering tools in agriculture.

2. Inaugural Session (17 November 2025)

The workshop was formally inaugurated with the blessings of the **Hon’ble Vice-Chancellor, Prof. Tankeshwar Kumar**, who highlighted the transformative potential of genome editing in modern agriculture and sustainable crop improvement.

The session was graced by senior university dignitaries, including:

- **Prof. Neelam S. Sangwan (Convener)**

Prof. Sangwan welcomed the participants and outlined the objectives, training modules, and expectations of the workshop.

Organising Secretary, Prof. Rupesh Deshmukh, along with his research team, introduced the three-day workflow, focusing on intensive hands-on training sessions to be conducted in CUH’s state-of-the-art biotechnology laboratories.

3. Technical and Hands-on Sessions

Throughout the workshop, participants received focused training on **CRISPR-Cas9 genome editing** through interactive lectures, demonstrations, and laboratory exercises. The major topics covered included:

- Principles of genome editing and CRISPR-Cas systems
- **gRNA design and optimization**
- **Vector construction for gene editing**
- **Transformation strategies in plants**
- **Screening and analysis of edited tissues**

The hands-on sessions were led by **Dr. Humira Sonah**, supported by an experienced team of research scholars:

- Dr. Sreeja Sudhakaran
- Mukesh Meghwal
- Badal Mahakalkar
- Pawan Kumar
- Pragati Singh
- Akash Maurya
- Geetanjali Joshi
- Daya Patel

Their guidance ensured that the participants gained practical confidence in executing genome-editing experiments from design to analysis.

4. Participant Engagement

The trainees actively participated in laboratory modules, discussions, and troubleshooting sessions. The diversity of student backgrounds contributed to productive scientific exchanges and collaborative learning.

Daily laboratory practice allowed participants to:

- Plan CRISPR experiments

- Select appropriate targets
- Clone and assemble genome-editing vectors
- Perform transformation workflows
- Interpret results from edited tissues

The interactive nature of the program enabled participants to clarify concepts and apply skills immediately.

5. Valedictory Session (19 November 2025)

The valedictory session marked the successful completion of the workshop. **Dr. Vippan Parihar** and **Prof. Neelam S. Sangwan** addressed the participants, appreciating their dedication and active involvement. They encouraged students to apply the acquired skills in their future research endeavours and contribute to the advancement of plant biotechnology in India.

Prof. Rupesh Deshmukh, on behalf of the organising team, expressed heartfelt gratitude to:

- The Hon'ble Vice-Chancellor for his continuous guidance
- Faculty members and research scholars
- Technical and administrative staff
- All 30 participants for their enthusiastic engagement

6. Outcomes of the Workshop

The workshop successfully achieved the following outcomes:

- Built **foundational skills** in CRISPR-Cas9 genome editing among young researchers
- Enhanced participants' ability to design, execute, and analyze gene-editing workflows
- Strengthened national networking among students from multiple states
- Provided exposure to advanced instruments and laboratory practices
- Fostered motivation for pursuing genome editing in agricultural biotechnology research

7. Conclusion

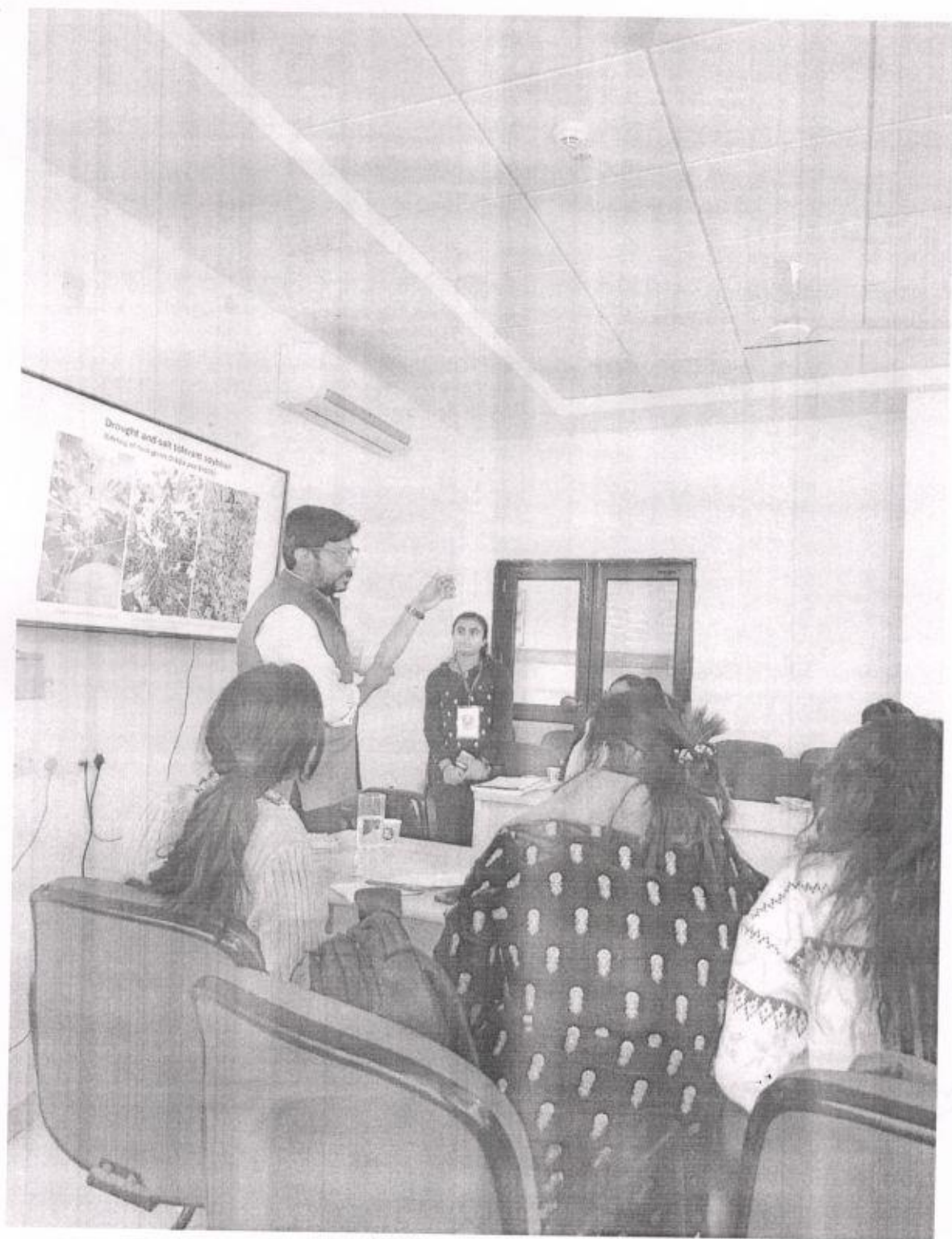
The three-day national workshop concluded on a highly positive note, having fulfilled its objective of empowering beginners with essential skills in plant genome editing. By combining conceptual understanding with practical training, the workshop offered a valuable platform for capacity building and professional development. The initiative underscores the Central University of Haryana's commitment to advancing scientific education and nurturing future researchers in the field of genome engineering.



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Longitude: 76.146914
Altitude: 240.0±5.06 m
Accuracy: 36.9 m
Time: 17-11-2025 11:40

Note: Empowering Beginners: Hands-on Training in Plant Genome Editing

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S.no	Name	Institution Name	Signature
1	Mukesh	Central University Haryana, Mahendragarh	Mukesh
2	Gajendra Singh	University of Kerala, Thiruvananthapuram, Kerala	Gajendra Singh
3	Gowdara S.R.	University of Kerala, Thiruvananthapuram, Kerala	Gowdara S.R.
4	Dr. Kishor John	University of Kerala, Thiruvananthapuram, Kerala	Dr. Kishor John
5	Somya Raj	University of Kerala, Thiruvananthapuram, Kerala	Somya Raj
6	Abhishek	Guru Jambhadracharya University, Mysore	Abhishek
7	Shrestha	Guru Jambhadracharya University, Mysore	Shrestha
8	Jyoti	Central University of Haryana	Jyoti
9	Dilshida	Central University of Haryana	Dilshida
10	Christina's Poon	Central University of Technology, Marangol	Christina's Poon
11	Ayesha Handapan	"	Ayesha Handapan
12	Kirti Mahajan	Central University of Rajasthan	Kirti Mahajan
13	Pooja Raut	Central University of Rajasthan	Pooja Raut
14	Ashay Sachdev	Central University of Rajasthan	Ashay Sachdev
15	Ajagay Kishore	University of Allahabad	Ajagay Kishore
16	ARZO SAINI	Central University of Haryana	ARZO SAINI
17	POSA KHANDEWAL	Central University of Haryana	POSA KHANDEWAL
18	Konika Sahi	Central University of Haryana	Konika Sahi
19	Rishi	University of Delhi	Rishi
20	Arushi	University of Delhi	Arushi
21	Komal Chaudhary	CCS HAU Hisar	Komal Chaudhary
22	Pooja Yadav	CCS HAU Hisar	Pooja Yadav
23	Saibhavi Yadav	Central University of Haryana	Saibhavi Yadav
24	Ashish Mehta	Central University of Haryana	Ashish Mehta
25	Sanjay K. Sharma	Central University of Rajasthan	Sanjay K. Sharma

[Signature]
19/11/2021

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कृषि सुधार में तकनीक अहम : कुलपति

हर्केवि में पौधों की जीनोम एडिटिंग पर तीन दिवसीय राष्ट्रीय कार्यशाला शुरू

मयाद न्यूज एजेंसी

महेंद्रगढ़: हरियाणा के राज्य विज्ञान विद्यालय में आयोजित द्विदिवसीय 'नस्ल जीनोम एडिटिंग' शृंखला में हरियाणा और गुजरात पर केन्द्रित तीन दिवसीय राष्ट्रीय कार्यशाला का समापन हो गया।

विज्ञान विद्यालय के ज्येष्ठ प्राध्यापक विभाजन शर्मा शर्मा, टेक्नोलॉजी मैनेजर (आरपीएस) के. मधुसूदन तन्हासकर ने आयोजित इस कार्यशाला का उद्घाटन विज्ञान विद्यालय के कुलपति प्रो. टिकेश्वर कुमार ने किया।

कुलपति प्रो. टिकेश्वर कुमार ने कहा कि पौधों की जीनोम एडिटिंग के माध्यम से हम नए प्रकार के पौधों को विकसित कर सकते हैं। कार्यक्रम की सफलता का अंशकार प्रो. जे.एम. मोग्गिया ने प्राध्यापकों का सहभागिता और उनके कार्यशाला की सफलता से व्यक्त किया।

आगामी वर्ष प्रो. मोग्गिया देशभर में



तीन दिवसीय राष्ट्रीय कार्यशाला के उद्घाटन में प्रो. मोग्गिया (दोसरे से) कुलपति प्रो. टिकेश्वर कुमार (बाएं)।

उनकी अनुसंधान टीम ने अनेकों नए पौधों की पहचान की। इस कार्यशाला में पौधों की जीनोम एडिटिंग के माध्यम से नए प्रकार के पौधों को विकसित करने का प्रयास किया गया है। कार्यक्रम के लिए प्रो. मोग्गिया ने 30 विद्वानों को चुना है। कार्यशाला के लिए प्रो. मोग्गिया ने 30 विद्वानों को चुना है।

हर्केवि का ज्येष्ठ प्राध्यापक विभाजन शर्मा शर्मा ने कहा कि यह कार्यशाला पौधों की जीनोम एडिटिंग के माध्यम से नए प्रकार के पौधों को विकसित करने का प्रयास किया गया है।

महेंद्रगढ़ शहर के ज्येष्ठ प्राध्यापक विभाजन शर्मा शर्मा ने कहा कि यह कार्यशाला पौधों की जीनोम एडिटिंग के माध्यम से नए प्रकार के पौधों को विकसित करने का प्रयास किया गया है।

कार्यशाला के उद्घाटन में प्रो. मोग्गिया ने कहा कि यह कार्यशाला पौधों की जीनोम एडिटिंग के माध्यम से नए प्रकार के पौधों को विकसित करने का प्रयास किया गया है।

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19/11/2025