



AMITY UNIVERSITY PROGRESS AGAINST SDG2 ZERO HUNGER

Empowering local farmers and food producers is a crucial step in achieving food security and sustainable agriculture. Through extension activities, training programs, and access to university facilities, farmers gain the knowledge and skills necessary to thrive in modern farming practices.

Amity University Uttar Pradesh, Noida is committed to generating knowledge and developing technologies for farmers and producers and sharing the developed knowledge and technologies with farmers, students, and all stakeholders. Eight institutions at Amity University are dedicated to working on food security and sustainable agriculture covering the various aspects ranging from soil and value chain development. The excellent lab infrastructure is being used to develop technologies and create solutions for food security and sustainable agriculture. Dedicated extension services work in transferring knowledge and technologies to the farmers.

During the year 2023-24, several such activities were conducted for demonstration. A list of which is provided in Demo Annexures.

1. Demonstrated spray of nano fertilizers by drone to farmers by presence of JDA, DDA, and DAO along with KVK head on 15th December 2023
2. Demonstration to improve seeds and practices to farmers in Uttar-Pradesh. (Year 2023-24)
3. Demonstration to improve seeds and practices to Farmers in Jharkhand. (Year 2023-24)
4. Providing events for Local Farmers and Food producers to contact and transfer Knowledge. (Year 2023-24)
5. Unnat Bharat Abhiyan on 19th January 2023.
6. Indian's Only Trade Fair Specialized on Urban Farming from 24 to 25 March 2023
7. Demonstration of the importance of Millets in Ensuring Food and Nutritional Security (Year 2023-24)
8. Front Line Demonstration on Mustard at Madawarh, Sikandrabad
9. Front Line Demonstration on Field Pea at Bilaspur block dankaur

10. Front Line Demonstration on Lentil at Noor pur, Madhiya block Dadri, GB nagar
11. Front Line Demonstration on Barley at Jamalpur, block jewar, GB Nagar
12. Front Line Demonstration on Urad Bean at Salempur, block jewar, GB Nagar
13. Front Line Demonstration on Sesame at Mohammadpur, Jewar
14. Front Line Demonstration on Pigeon Pea at Kanarsa block dankaur, GB Nagar

In addition, Amity University has promoted 7 Farmer's Producer Organizations (FPOs) in Aligarh, Akbarpur, and Dhanbad districts. More than 1,500 farmers have benefited from these activities.

In brief demonstration of technologies included a new biofertilizer developed by Amity University from Sal cake, technology for control of fusarium wilt, banana cultivation, integrated pest management, climate-smart agricultural practices, water-efficient technologies, millet production, milled-based food, nano-urea, insect traps, production of biopesticide and biofertilizer.

. The Front-Line Demonstration program and the emphasis on integrated pest management are instrumental in improving crop production, protection, productivity, and livelihoods. These efforts, combined with a commitment to sustainable farming practices, ensure a brighter and more secure future for local agriculture.

Demonstrated spray of nano fertilizers by drone to farmers by presence of JDA, DDA, and DAO along with KVK head

A hands-on demonstration of nano-fertilizer application using drones will showcase the precision and efficiency of modern technology in agriculture. This is designed to familiarize farmers with advanced spraying techniques and the benefits of using drones for uniform fertilizer distribution. The presence of key officials, including the Joint Director of Agriculture (JDA), Deputy Director of Agriculture (DDA), District Agriculture Officer (DAO), and the Head of Krishi Vigyan Kendra (KVK), will lend credibility and importance to the event. Their insights into policy support and incentives for modern farming practices will be valuable for the farmers.

Demonstration to improve seeds and practices to farmers in Uttar-Pradesh. (Year 2023-24)

Demonstration of high-yielding and climate-resilient seed varieties suitable for the region. Introduction of disease-resistant and pest-resistant varieties to reduce

dependency on chemical treatments. Education on soil testing, organic matter addition, and balanced fertilization to optimize crop yield.

Demonstration to improve seeds and practices to Farmers in Jharkhand. (Year 2023-24)

Amity holds licenses for seeds, fertilizers, and pesticides, ensuring access to certified, quality inputs.

Emphasis on rice, the primary crop in Egarkund block of Dhanbad district.

Empowering Local Farmers for Sustainable Agriculture and Food Security

Access to food security and sustainable agriculture knowledge, skills, and technology is paramount for local farmers and food producers. The Front-Line Demonstration program, which covered a substantial area of 193 acres in beneficiary fields, adopts a cluster approach to enhance crop production, protection, productivity, income, and employment through the implementation of good agricultural practices and integrated pest management (IPM) techniques. In this report, we discuss the importance of extension activities, training programs, and providing access to university facilities to empower local farmers and promote sustainable farming practices.

Extension programs serve as a vital instrument for agricultural development by bridging the gap between researchers and farmers. Effective extension services play a pivotal role in gathering technical feedback from farmers and conveying it to research scientists, fostering demand-driven research. The primary objective of these extension activities is to create a farmer-driven system for the dissemination of agricultural technology. This necessitates a robust extension strategy, which can adapt to the evolving practices of modern farming and embrace digital modes of communication, emphasizing soil and crop health management and sustainable resource management.

Numerous training programs have been organized to educate local farmers on pre and post-harvest management of various crops, such as pulses, oilseeds, cereals, and horticulture crops. These training sessions aim to impart knowledge on integrated nutrient management, production technology, and the bio-control of insect pests and soil-borne diseases. Additionally, they raise awareness about integrated pest management and the benefits of multi-cropping farming approaches for improved livelihood and nutritional security. A total of 12 training programs have been conducted, benefitting 610 farmers in total.

Empowering Rural India through Unnat Bharat Abhiyan: A Path to Sustainable Development

Unnat Bharat Abhiyan, a Central Government program, plays a pivotal role in fostering collaboration between higher educational institutions and rural India to address development challenges and accelerate sustainable growth. The mission is to create a mutually beneficial relationship between society and academia, offering knowledge and practices for emerging professions while upgrading the capabilities of public and private sectors to cater to the development needs of rural India. This report sheds light on the activities and initiatives conducted under Unnat Bharat Abhiyan, emphasizing its significance in promoting rural development.

The inaugural Unnat Bharat Abhiyan activity involved a visit to the primary school in Nagliwazidpur, a village in the western part of Uttar Pradesh. The interaction session encompassed various key topics, including:

International Year of Millets: This discussion highlighted the importance of millets, a nutrient-rich grain, and its role in promoting food security and sustainability.

Unnat Bharat Abhiyan Demonstration: The core objective of Unnat Bharat Abhiyan was explained, emphasizing the involvement of higher educational institutions in identifying rural challenges and developing sustainable solutions.

Door to Door Survey: This activity aimed to gain insights into the needs and challenges faced by the rural community, an essential step in tailoring development initiatives.

The second Unnat Bharat Abhiyan activity involved a visit to Mangrauli Chhaprauli village, where a comprehensive survey was conducted. This initiative sought to improve the living standards of rural communities by promoting sustainable development through technology and innovation. The program's primary objective is to identify rural development challenges and devise sustainable solutions. During this visit:

The team interacted with farmers, and specifically, explored the preparation of vermicompost, an environmentally friendly and nutrient-rich fertilizer.

During the year 2023-24, several such activities were conducted for training. A list of which is provided in training Annexures.

1. Training for farmers about Nano fertilizers in Aligarh, U.P.
2. Training on Innovative farm technologies with Farmer's Producer Organizations (FPOs) in the Aligarh district.

3. Training on plantation drive to protect the environment for farmers in Farmer Producer Organization (FPO), Tanda Block, Ambedkar Nagar District
4. 'Know Your Millets'
5. Organized one day workshop "Vigyan, Anusandhaan Aur Jagruk Kisan Milkar Karen Uttam Bhavishya Ka Nirmaan" Dissemination of safe & cost effective IPM technologies for combating soil borne pathogens.
6. Amity Youth Fest 2023, PHALMIL,
7. Organized one day workshop for "Skill Development Program on Management of Tropical & Subtropical Fruit Crops".
8. Farmers Training programme on Mustard
9. Farmers Training programme on Field Pea
10. Farmers Training programme on Lentil
11. Farmers Training Programme on Barley
12. Farmers Training programme on Urad Bean
13. Farmers Training programme on Sesame
14. Farmers Training programme on Urad Bean
15. Farmers Training Programme on Pigeon Pea

Training for farmers about Nano fertilizers in Aligarh, U.P.

Overview of what nano fertilizers are, their composition, and how they differ from traditional fertilizers. Explanation of how nano fertilizers enhance nutrient uptake, reduce wastage, improve crop yield, and contribute to sustainable farming practices. Insights into how nano fertilizers impact soil health positively and enhance the nutritional quality of the crops. With lower quantities of nano fertilizers needed and less chemical buildup, soil structure and microbial health can improve, supporting better crop growth over multiple seasons. Crops treated with nano fertilizers often have higher nutritional quality, which can help farmers achieve better market prices and consumer demand.

Training on Innovative farm technologies with Farmer's Producer Organizations (FPOs) in the Aligarh district

Overview of new tools and techniques, including nano fertilizers, precision farming technologies, and mobile-based applications for better farm management. Guidance on value addition techniques and product diversification to boost FPOs' competitive edge, helping farmers achieve higher profits. Facilitating connections between FPOs and potential buyers, suppliers, and government officials for partnerships and collaborations. By learning about and

adopting innovative technologies like nano fertilizers and precision farming tools, farmers can optimize input use, leading to higher crop yields and better quality produce.

Training on plantation drive to protect the environment for farmers in Farmer Producer Organization (FPO), Tanda Block, Ambedkar Nagar District

Tree plantations contribute to soil conservation, water retention, carbon sequestration, and temperature regulation, leading to improved crop yields and resilience to climate change. Training on integrating tree planting within agricultural land (agroforestry) to enhance productivity, protect crops, and reduce dependency on chemical inputs. Farmers can work collectively within the FPO to plant and maintain trees, reducing individual workload and fostering a sense of shared responsibility.

Know Your Millets: This session delved into the role and importance of millets in enhancing food security and nutrition. Millets are not only highly nutritious but also environmentally friendly, making them a valuable asset in the context of sustainable agriculture and food security.

Unnat Bharat Abhiyan is a crucial initiative that bridges the gap between rural communities and higher educational institutions. By engaging in activities such as village visits, surveys, and awareness programs like International Millets Day, Unnat Bharat Abhiyan promotes sustainable development in rural areas. The program's focus on identifying and addressing rural challenges, like the promotion of millets, serves to enhance the living standards of rural communities while fostering a mutually beneficial relationship between academia and society. Through such endeavors, Unnat Bharat Abhiyan contributes to India's inclusive growth and development.

Organized one day workshop “Vigyan, Anusandhaan Aur Jagruk Kisan Milkar Karen Uttam Bhavishya Ka Nirmaan” Dissemination of safe & cost effective IPM technologies for combating soil borne pathogens

During the scientific sessions, experts provided valuable insights into critical aspects such as water conservation, soil-borne diseases management, modern organic farming, and innovative pest management technologies. Their contributions paved the way for a comprehensive understanding of the challenges faced by farmers and the necessary preventive measures to ensure sustainable and fruitful agricultural practices.

The workshop concluded with the resounding message, "VIGYAN, ANUSANDHAAN AUR JAGRUK KISAN MILKAR KAREN UTTAM

BHAVISHYA KA NIRMAAN" (Science, research, and aware farmers together build a better future). This resonates with Amity's overarching vision of empowering farmers with knowledge and resources to enhance agricultural productivity, ensure environmental sustainability, and improve the socio-economic well-being of communities.

Organized one day workshop for “Skill Development Program on Management of Tropical & Subtropical Fruit Crops”

The NABARD project farmers and gardening staff demonstrated a noticeable improvement in their gardening techniques, resulting in better landscape maintenance across the campus. The plantation drive added lush greenery to the university campus, improving its aesthetics and providing a conducive environment for academic and recreational activities. The awareness programs instilled a sense of responsibility towards sustainability, leading to reduced water consumption, minimal use of chemical pesticides, and increased composting practices. The introduction of plant species contributed to the promotion of local biodiversity, attracting various birds and insects, and supporting the ecosystem.

Farmers Training programme on Mustard

Front Line Demonstration on Mustard at Madawarh, Sikandrabad.

Farmers Training programme on Field Pea

Front Line Demonstration on Field Pea at Bilaspur block dankaur.

Farmers Training programme on Lentil

Front Line Demonstration on Lentil at Noor pur, Madhiya block Dadri, GB nagar.

Farmers Training Programme on Barley

Front Line Demonstration on Barley at Jamalpur, block jewar, GB Nagar.

Farmers Training programme on Urad Bean

Front Line Demonstration on Urad Bean at Salempur, block jewar, GB Nagar.

Farmers Training programme on Sesame

Front Line Demonstration on Sesame at Mohammadpur, Jewar.

Farmers Training programme on Urad Bean

Farmers Training programme on Urad Bean at Kalonda block Dadri, GB Nagar.

Farmers Training Programme on Pigeon Pea

Front Line Demonstration on Pigeon Pea at Kanarsa block dankaur, GB Nagar.

Providing Access to University Facilities:

One significant facet of empowering local farmers is granting them access to university facilities, including labs, technology, and plant stocks. This enables farmers to enhance their understanding of sustainable farming practices. In Gautam Budh Nagar, Uttar Pradesh, a training and demonstration program targeted farmers engaged in vegetable and rice cultivation. During farm visits, it was evident that several soil-borne fungal and root knot nematode diseases heavily infested crops like tomatoes, brinjals, okra, cauliflower, cabbage, and chili. To address these issues, farmers were trained to produce biopesticides using locally available agricultural products like sorghum, millet, and maize. The mass production of biocontrol agents, particularly *Trichoderma* spp., was taught to the farmers. They were shown how to create these biocontrol agents using a pressure cooker and autoclavable polypropylene bags. Practical demonstrations were carried out to ensure farmers could replicate the process on their own, enabling them to effectively combat these diseases in future applications.