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Quarterly Plant Health NEWS LETTER

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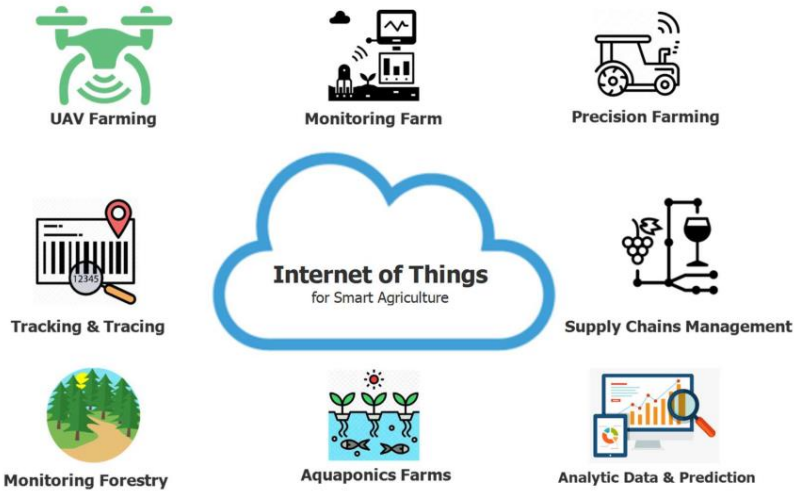
THEME ARTICLE



SPECIAL EVENTS

WHAT'S INSIDE

The agricultural sector is facing major challenges on inadequacy of water resources. Since, the agriculture sector is biggest users of water necessary for the production process and the dependability of the cultivated space. Also, the effect of climate change worsens the challenges of dry areas which are characterized by acute water scarcity and land degradation. Since climatic challenges constrain sustainable agricultural development, greater emphasis is needed to safeguard natural resources and agro-ecological practices. Also, for food security purposes, there is an urgent need to adopt a sustainable and economically viable crop production system to enhance production efficiency, productivity and quality. In spite of these challenges, advances in science and technology, and closer cooperation and partnerships between various organizations will provide numerous opportunities.

As far as water management is concerned, the real contribution to the required increase in food production would have to come in particular from improvement and extension of agricultural water management - from storage to management - in the production areas most vulnerable to climate variability, the modernisation, upgrading or complementing of existing irrigation and drainage systems. Special attention is needed for sustainable management of the water sources for agriculture and food. It is required to investigate closely the governance of groundwater, the safe use of non-conventional waters, as well as the options for increasing water storage - of all sizes - to make agriculture and the large population of smallholder farmers more resilient to climate change impacts.

The theme article in this issue presents the irrigation systems and water management which is the backbone of agriculture food production. The current scenario of the water crisis is a major concern not only in the agriculture sector but also in the areas of the households, and industrials sector as well. It is known that around 70-75% of water is used by the agriculture sector alone. The development of resources and precise utilization of modern techniques will contribute to raising productivity and increased self-reliance in food commodities. There are several ways to use the precious water in agriculture. Technologies like drip or trickle which supplies the water in the root zone and elevate the production which is the ultimate aim for all of us.

कृषि क्षेत्र जल संसाधनों की अपर्याप्तता से जुड़ी बड़ी चुनौतियों का सामना कर रहा है। चूँकि, कृषि क्षेत्र उत्पादन प्रक्रिया और खेती योग्य भूमि की विश्वसनीयता के लिए आवश्यक जल का सबसे बड़ा उपयोगकर्ता है। साथ ही, जलवायु परिवर्तन का प्रभाव शुष्क क्षेत्रों की चुनौतियों को और भी बदतर बना देता है, जहाँ पानी की भारी कमी और भूमि क्षरण की समस्या है। चूँकि जलवायु संबंधी चुनौतियाँ सतत कृषि विकास में बाधा डालती हैं, इसलिए प्राकृतिक संसाधनों और कृषि-पारिस्थितिक प्रथाओं की सुरक्षा पर अधिक ज़ोर देने की आवश्यकता है। साथ ही, खाद्य सुरक्षा के लिए, उत्पादन क्षमता, उत्पादकता और गुणवत्ता बढ़ाने हेतु एक स्थायी और आर्थिक रूप से व्यवहार्य फसल उत्पादन प्रणाली अपनाने की तत्काल आवश्यकता है। इन चुनौतियों के बावजूद, विज्ञान और प्रौद्योगिकी में प्रगति, और विभिन्न संगठनों के बीच घनिष्ठ सहयोग और साझेदारी कई अवसर प्रदान करेगी।

जहाँ तक जल प्रबंधन का प्रश्न है, खाद्य उत्पादन में अपेक्षित वृद्धि में वास्तविक योगदान विशेष रूप से कृषि जल प्रबंधन में सुधार और विस्तार से ही संभव होगा - भंडारण से लेकर प्रबंधन तक - उन उत्पादन क्षेत्रों में जो जलवायु परिवर्तन के प्रति सर्वाधिक संवेदनशील हैं, साथ ही मौजूदा सिंचाई और जल निकासी प्रणालियों का आधुनिकीकरण, उन्नयन या पूरकीकरण भी। कृषि और खाद्यान्न के लिए जल स्रोतों के सतत प्रबंधन पर विशेष ध्यान देने की आवश्यकता है। भूजल के प्रबंधन, गैर-पारंपरिक जल के सुरक्षित उपयोग, और साथ ही सभी आकारों के जल भंडारण को बढ़ाने के विकल्पों की बारीकी से जाँच-पड़ताल करना आवश्यक है ताकि कृषि और छोटे किसानों की विशाल आबादी जलवायु परिवर्तन के प्रभावों के प्रति अधिक लचीली बन सके।

इस अंक का मुख्य लेख सिंचाई प्रणालियों और जल प्रबंधन पर केंद्रित है, जो कृषि और खाद्य उत्पादन की रीढ़ हैं। जल संकट का वर्तमान परिदृश्य न केवल कृषि क्षेत्र में, बल्कि घरेलू और औद्योगिक क्षेत्रों में भी एक बड़ी चिंता का विषय है। यह सर्वविदित है कि लगभग 70-75% जल का उपयोग अकेले कृषि क्षेत्र में ही होता है। संसाधनों का विकास और आधुनिक तकनीकों का सटीक उपयोग उत्पादकता बढ़ाने और खाद्य वस्तुओं में आत्मनिर्भरता बढ़ाने में योगदान देगा। कृषि में बहुमूल्य जल का उपयोग करने के कई तरीके हैं। ड्रिप या ट्रिकल जैसी तकनीकें जड़ों तक पानी पहुँचाती हैं और उत्पादन बढ़ाती हैं, जो हम सभी का अंतिम लक्ष्य है।

(Dr. Sagar Hanuman Singh IPoS)
Director General

THE POWER OF AUTOMATED IRRIGATION SYSTEMS

Er. Govind Kumar Maurya

Introduction

Efficient water management is a major concern in precision irrigation practices. There is a great need to modernize agricultural practices for better water productivity and resource conservation. The use of automated irrigation systems can provide water on a real-time basis at the root zone, based on the availability of soil water at the crop root zone, which also leads to saving of water (A. Blum; 2009). Automated irrigation systems allow for high-frequency irrigation, thus maintaining the soil water potential (SWP) relatively constant. Irrigation scheduling remains a reliable technique for applying the required amount of water at the appropriate time and automated irrigation systems based on crop water needs can maximize water use efficiency (Munoz *et al*., 2003). Ganjeer (2019) studied on use of automated irrigation in comparison to manual irrigation in wheat by use of humidity controlled sensors and reported that maximum water use efficiency was obtained in sensor based irrigation and there was 15.85% water saving through sensor based irrigation. Jat *et al*., (2019) studied on automation of micro- climate control through sensors and controllers under open-field and polyhouse culture, at irrigation levels of 80% or 100% of crop evapotranspiration and reported that programmable logic controller-based automation system worked well for micro- climate control leading to 93% and 53% higher yield and fruit weight, respectively in the polyhouse than open-field cultivation. Sathya et al., (2016) proposed system develops an automated irrigation system in rice to direct the water flow in the paddy fields. This system uses water level sensors to identify the water level in the field and also the moisture sensors to identify the moisture level in the soil and change the flow of water to the next farm accordingly. It guarantees the efficient usage of water and also prevents the damage of crops due to overflow of water. With the use of these advanced technologies, some of the traditional techniques in the agriculture can be automated to increase the productivity and also the efficient usage of their sources.

As we very well aware that water is one of the most vital resources in agriculture; yet managing it efficiently remains a significant challenge for farmers worldwide. With the increasing demand for food and the need for sustainable farming practices, automated irrigation systems have emerged as a game-changer. These systems offer precision, efficiency, and scalability, transforming traditional agricultural methods into smart, data-driven practices.

What is Automated Irrigation?

Automated irrigation refers to the use of technology to control and manage the delivery of water to crops without manual intervention. These systems typically utilize sensors, controllers, timers, and valves, often integrated with weather forecasts and soil moisture data, to determine when and how much water is needed.

Types of Automated Irrigation Systems

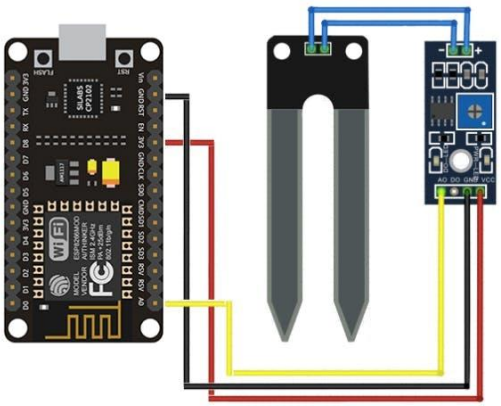
1. **Time-based Systems**: Operate on pre-set schedules, turning water on and off at specific times.
2. **Sensor-based Systems**: Use soil moisture, temperature, or weather sensors to trigger irrigation only when necessary.
3. **Remote-controlled Systems**: Allow farmers to manage irrigation through smartphones or computers using IoT technology.
4. **Drip and Sprinkler Automation**: Integrate with drip or sprinkler mechanisms for precise water delivery.

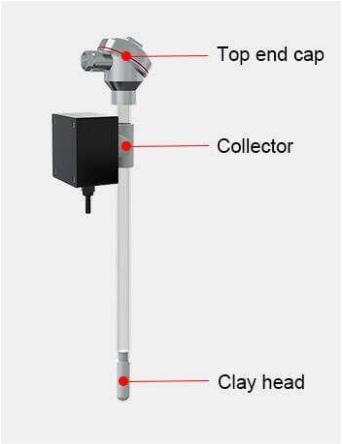
Advantages of Automated Irrigation

- **Water Conservation**: Prevents overwatering by delivering just the right amount of water, based on real-time data.
- **Labor Efficiency**: Reduces the need for manual operation, allowing farmers to focus on other critical tasks.
- **Improved Crop Yields**: Ensures consistent watering, promoting healthier plant growth and higher productivity.
- **Energy Savings**: Automation can be programmed for off-peak hours, reducing energy costs.
- **Remote Monitoring**: Enables oversight and control from virtually anywhere, enhancing convenience and responsiveness.

Technologies Involved

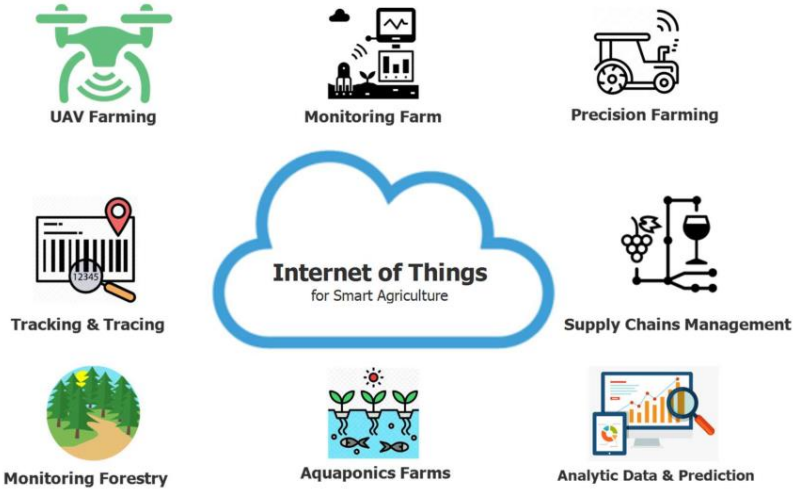
- **Soil Moisture Sensors:** Soil moisture sensors are divided into two categories depending on the technology they use: 1) Sensors that measure volumetric water content and 2) Sensors that measure soil tension when placed in the soil profile.





- **Weather Stations:** Weather conditions heavily influence the success of agricultural farms. Crop failures often result from extreme temperatures, inadequate humidity, or excessive light intensity. Continuous weather monitoring is essential for farmers to safeguard crops and livestock. Advanced weather monitoring system delivers precise real-time data on critical weather parameters, enabling farmers to make informed decisions. Additionally, the system provides timely alerts in case of extreme weather conditions, allowing proactive measures to minimize damage. By leveraging accurate insights, farm owners can optimize resource use, enhance productivity, and ensure the sustainability of their agricultural operations.

- **Internet of Things (IoT) Devices:** IoT in agriculture, also known as smart farming or precision farming, leverages interconnected devices and systems to monitor and manage various aspects of agricultural operations, leading to increased efficiency, productivity, and sustainability. This technology involves deploying sensors and devices across farms to collect data on environmental conditions, crop health, and other relevant parameters, which is then analyzed to provide actionable insights for farmers.



How's IoT shaping agriculture?

Technologies and IoT have the potential to transform agriculture in many aspects. Namely, there are **6 ways IoT can improve agriculture**:

i. **Data, tons of data, collected by smart agriculture sensors,** e.g. weather conditions, soil quality, crop's growth progress or cattle's health. This data can be used to track the state of your business in general as well as staff performance, equipment efficiency, etc.

ii. **Better control over the internal processes and, as a result, lower production risks**. The ability to foresee the output of your production allows you to plan for better product distribution. If you know exactly how much crops you are going to harvest, you can make sure your product won't lie around unsold. **Cost management and waste reduction thanks to the increased control over the production**. Being able to see any anomalies in the crop growth or livestock health, you will be able to mitigate the risks of losing your yield.

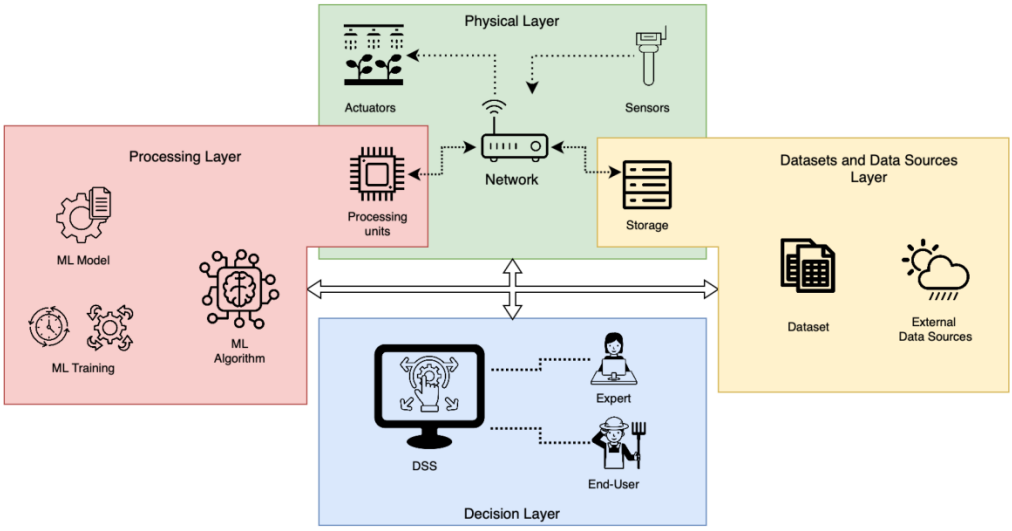
iii. **Increased business efficiency through process automation**. By using smart devices, you can automate multiple processes across your production cycle, e.g. irrigation, fertilizing, or pest control.

iv. **Enhanced product quality and volumes**. Achieve better control over the production process and maintain higher standards of crop quality and growth capacity through automation.

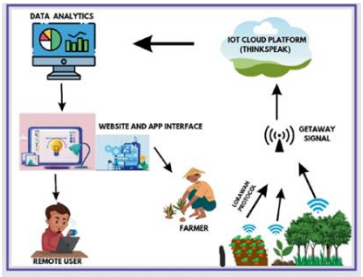
v.

vi. **Reduced environmental footprint.** Automation also carries environmental benefits. Smart farming technologies can cut down on the use of pesticides and fertilizer by offering more precise coverage, and thus, reduce greenhouse gas emissions.

- **Machine Learning Algorithms** (for predictive irrigation): Linear, polynomial, and logistic regression are some examples of parametric machine learning methods used for smart irrigation. Regression is one of the data mining techniques used to forecast the amount of water required for the next irrigation.



- **Mobile and Web Applications:** Mobile and web applications play a crucial role in modern automated irrigation systems, enabling remote monitoring and control, data visualization, and efficient water management. These applications, often integrated with IoT devices and cloud platforms, allow farmers to optimize irrigation practices, reduce water consumption, and improve crop yields.



Challenges and Considerations

While automated irrigation offers numerous benefits, implementation can be costly and requires technical expertise. Small-scale farmers may face difficulties in adopting these systems without proper support or subsidies. Additionally, system maintenance and connectivity in remote areas can pose challenges.

Future of Automated Irrigation

The future lies in fully integrated smart farming ecosystems. With advancements in AI, robotics, and big data, automated irrigation will become more adaptive and predictive. Governments and organizations are increasingly promoting these technologies through subsidies and training, recognizing their potential to ensure food security, environmental sustainability and conserve water resources.

Conclusion

Automated irrigation systems represent a vital innovation in modern agriculture. They not only address the pressing issue of water management but also pave the way for smarter, more resilient farming. As technology becomes more accessible, these systems will likely become a staple in farms of all sizes, revolutionizing the way we grow our food.

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Training Programs

Plant BioSecurity Division

CAPACITY BUILDING PROGRAMMES:

The Plant Biosecurity Division has organized following training programmes during the months of **April-June, 2025.**

S. No.	Name of The Programme	Duration	Date	
			From	To
	Plant Biosecurity Division (PBD)			
1)	Urban Pest Management for Technicians	01 Day	11.04.2025	11.04.2025
2)	Plant Biosecurity: Trends & Perspectives	05 Days	21.04.2025	25.04.2025
3)	Forced Hot Air Treatment (FHAT)	05 Days	21.04.2025	25.04.2025
4)	Urban Integrated Pest Management	15 Days	23.04.2025	07.05.2025
5)	Scientific storage practices for agro commodities	05 Days	28.04.2025	02.05.2025
6)	Plant Quarantine Procedures for Export and Import	05 Days	06.05.2025	10.05.2025
7)	Invasive Pest Threats to India Agriculture	03 Days	14.05.2025	16.05.2025
8)	Rodent Pest Management	05 Days	19.05.2025	23.05.2025
9)	Orientation for PSC issuing authorities on ISPMs related to PSC, Phytosanitary requirements of importing countries and procedure in India	03 Days	26.05.2025	28.05.2025
10)	Safe and Judicious Use of Glyphosate for PCOs	03 Days	28.05.2025	30.05.2025
11)	Fumigation as Phytosanitary Treatments: Aluminium Phosphide (ALP) and Methyl Bromide (MBr)"	15 Days	10.04.2025	24.04.2025
12)	Workshop on Judicious Strategies in Professional Pest Management at Bangalore	01 Day	06.06.2025	06.06.2025
13)	Workshop on Professional Pest Management at Chennai (Tamil Nadu)	01 Day	11.06.2025	11.06.2025
FARMERS PROGRAMME				
14)	Vertebrate Pest Management for the farmers of Tanjavur District, Tamil Nadu	01 Day	17.04.2025	17.04.2025
15)	Awareness program on export promotion and IPM of cotton to the farmers of Jolarpet, Tamil Nadu	01 Day	20.05.2025	20.05.2025

	WDRA Sponsored Programme			
16)	Farmers Awareness Programme on WDRA and benefits of NWR	02 Day	09.05.2025	10.05.2025
	APEDA Sponsored Programme			
17)	Area wide management of fruit fly in pomegranate is organized in collaboration with APEDA and KVK *Amroha, Uttar Pradesh*	01 Day	29.04.2025	29.04.2025

DETAILS OF TRAINING PROGRAMMES :

- **Plant Biosecurity: Trends & Perspectives**: The program was organized from 21.04.2025 to 25.04.2025 and attended by 07 officials from different states and the participants gained insights on risk assessment strategies, regulatory frameworks and the critical role of stakeholder engagement.

- **Urban Pest Management for Technicians**: The program was organised at Chennai, Tamil Nadu on 11.04.2025. Total 45 Pest Management technicians from different company were attended the training. The participants learnt about urban pest's biology, bionomics and management practices and prepares the participants for emergency preparedness to prevent the outbreak of communicable zoonotic diseases, to develop skills in safe use of chemical pesticides.

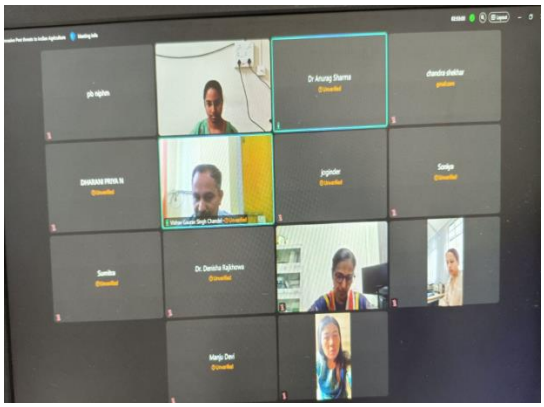
- **Forced Hot Air Treatment (FHAT)**: Training program for industry stakeholders was organized from 21.04.2025 to 25.04.2025 and attended by 45 participants. The participants learnt the critical requirements for establishing FHAT facilities calibration of sensors, placement of sensor, identification of coolest point, safety precautions, conducting the treatments, use of appropriate mark and record keeping in accordance with ISPM – 15 and NSPM – 9.

- **Urban Integrated Pest Management**: certificate course was organized for the structural pest management professionals from 23.04.25 to 07.05.25 at NIPHM. Total 31 participants attended and learnt about Ecology and ethology of rodents, mosquitos, termites, cockroaches, bedbug and flies etc. and their management practices.

- **Scientific storage practices for agro commodities**: The program was organized at NIPHM, Hyderabad during 28.05.2025 to 02.05.2025. Total 09 officers attended the program and gained knowledge on technical efficiency in maintenance of the grain storage management.

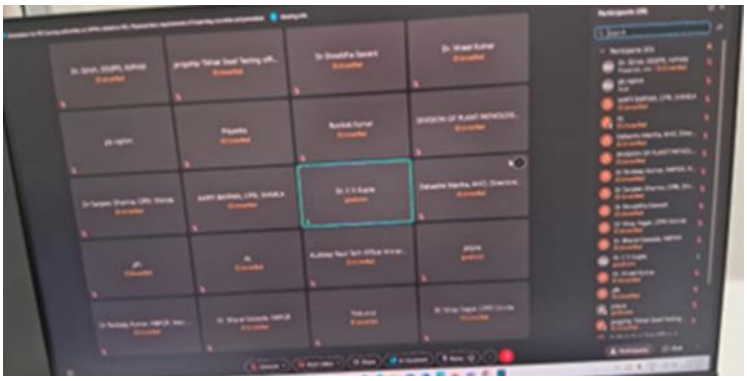
- **Plant Quarantine Procedures for Export and Import**: The program was organized from 06.05.2025 to 10.05.2025. Total 12 participants from government sector attended the program and gained insights on plant quarantine system, export and import procedures for plants and plant products and post entry quarantine for propagative material.

- **Introduced and Emerging Pest Threats to India:** The online program was organised from 14.05.2025 to 16.05.2025 and attended by 11 government officials from different states and organizations. The participants gained insights on plant biosecurity and emerging challenges to South Asian Regions and their impacts.



- **Rodent Pest Management:** The training program was organised at NIPHM to Agricultural Extension officers and private pest control operators from 19.05.2025 to 23.05.2025 at NIPHM. Total 28 participants trained on various aspects such as major rodents pests in agri and horti cultural ecosystem.

- **Online training program on "Orientation for PSC issuing authorities on ISPMs related to PSC, Phytosanitary requirements of importing countries and procedure in India" (*Payment Program*)**: was organized during 26.05.2025-28.05.2025. Total 39 officers were trained on international regulations and obligations under IPPC to promote safe agricultural trade.



- **Safe and Judicious Use of Glyphosate for PCOs (Payment Program)**: A three days training program was organised at NIPHM to private pest control operators from 28.05.2025 to 30.05.2025.Total 32 participants were attended the program and learnt on various topics such as Calibration and Calculation on dose and quantities of Glyphosate, weed index, method of application of Glyphosate including type of sprayer, nozzle, *etc.*, Label and leaflet warnings of Glyphosate application.

- **Fumigation as a Phytosanitary Treatment (Methyl Bromide and Aluminium Phosphide):** Fifteen days programme was organised at NIPHM during the training period (10.06.2025 to 24.06.2025) for commercial pest control operators. The participants (30 Pest Control Operators) get acquainted to the guidelines laid in NSPM-11, 12 (MBr fumigation) and NSPM-22 (Phosphine fumigation) to conduct appropriate fumigation procedures as well as the accreditation procedure of fumigation operators prescribed by the Directorate of Plant Protection Quarantine &Storage.

- **Judicious Strategies in Professional Pest Management:** The program was organized by NIPHM at Institute of Horticultural Technology, Bangalore, Karnataka on 6th June, 2025 in association with Indian Pest Control Association (IPCA) on consultancy basis. Total 109 professionals were attended the training. The participants learnt about identification of insect and non-insect pests, major rodent pests and their management in Urban environment, Safety trends in urban pest management, Business opportunities in urban sector and cockroach management etc.

- **Professional Pest Management:** The program was organized by NIPHM at Cosmopolitan Club, Chennai (Tamil Nadu) on 11th June, 2025 in association with Indian Pest Control Association (IPCA) on consultancy basis. Total 98 industry professionals were attended the program and learnt about the identification of insect and non-insect pests, major rodent pests and their management in urban environment, Safety trends in urban pest management, Use of AI and robot in urban Pest Management, Business opportunities in urban sector, and Anti-termite treatment in pre and post construction buildings and cockroach management.

PBD - FARMERS PROGRAMME :

- **Vertebrate Pest Management**: The program was organised for the farmers of Tanjavur District at Tamil Nadu on 17.04.2025 under the assistance of Tamil Nadu Agriculture Department (ATMA- scheme). Total 45 participants (40 farmers and 5 agricultural officers from Tamil Nadu state) were trained on various aspect vertebrate pests and Plant Health Management.

- **Awareness program on export promotion and IPM of cotton**: The program was organised for the farmers of Jolarpet, Tamil Nadu was conducted at NIPHM on 20thJune, 2025. Total 20 farmers attended the program and gained knowledge on different integrated pest management practices of cotton crop.

- **WDRA Sponsored Programmes:**
- **Farmers Awareness Programme on WDRA and eNWR *(WDRA Sponsored)*:** Warehousing Development Regulatory Authority (WDRA) has implemented e NWR system in the country and regulates through registration of warehouses intending to issue e NWRs against deposited commodities. By storing goods in WDRA registered warehouses food grains will be stored in good condition protecting the stock from infestation and farmers can be benefited by pledging loans from bank against the e-NWR issued. Thereafter, they can sell the produce when prices improve and adjust the pledge loan. This will help in improving farmers' income also. Two 1 day training programs on Farmers Awareness Programme on WDRA and benefits of NWR were organized to educate the farmers on WDRA and benefits of Negotiable Warehouse Receipt on 09.06.2025 and 10.05.2025 at Elamanchili and Kasimkota . Total 100 farmers attended the programs (50 each program).

- **APEDA Sponsored Programmes:**
- National Institute of Plant Health Management, Hyderabad, Telangana in collaboration with APEDA, on Area wide Management of fruit flies in Mango" *at Krishi Vigyan Kendra, Amroha, Uttar Pradesh on 29.04.25. Total 70 participants including farmers, FPOs, FPCs and exporters were attended and gained insights on management of fruit flies in mango crop.*

FORTHCOMING PROGRAMMES :

S.No	Name of the programme	No. of Days	From	To
	PBD			
1)	Phytosanitary Inspection Training (NSPM 23)	30 Days	01.07.2025	30.07.2025
2)	Non-Insect Pest Management – Mites,crabs, snails, slugs and avian	03 Days	02.07.2025	04.07.2025
3)	Pest Surveillancetechniques for agricultural and horticultural crops(Kharif / Rabi)	03 Days	07.07.2025	09.07.2025
4)	Eco-friendly approaches for management of vertebrate pests in agriculture and horticultural ecosystem	05 Days	14.07.2025	18.07.2025
5)	Level 1 Technician training for pest control operators Pest Control Operators with 10th std pass (for Private Industry)	02 Days	21.07.2025 & 15.09.2025	22.07.2025 & 16.09.2025
6)	Detection and Identification of Pests (Insects, Pathogens, Weeds and Nematodes)	05 Days	04.08.2025	08.08.2025
7)	Fumigation as a Phytosanitary Treatment (Methyl Bromide and Aluminium Phosphide)	03 Days	11.08.2025	13.08.2025
8)	Online digital tools in Plant Protection for Pest Surveillance techniques for Agricultural and Horticultural crop pests	03 Days	18.08.2025	20.08.2025
9)	Establishment of Plant Health Clinic for sustainable Management of Agricultural and Horticultural crops	03 Days	19.08.2025	21.08.2025
10)	Rodent Pest Management	05 Days	08.09.2025	12.09.2025
11)	Forced Hot Air Treatment (FHAT)	05 Days	15.09.2025	19.09.2025
12)	Pest Free Area for Market Access	02 Days	01.09.2025	02.09.2025
13)	Fruit fly: Surveillance andManagement for fruits and vegetables	05 Days	22.09.2025	26.09.2025

Plant Health Management Division

CAPACITY BUILDING PROGRAMMES:

Plant Health Management Division has organized following training programmes during the period **April-June, 2025.**

S No	Name of the programs	No. of Days	From	To
I.	**Officers programme**			
1.	Organic Farming Practices and Biofertilizer Production	5	19.05.2025	23.05.2025
2.	Organic Farming Practices and Biofertilizer Production	5	26.05.2025	30.05.2025
3.	Biological Control and Plant Health Strategies	30	26.05.2025	24.06.2025
4.	Organic Farming Practices and Biofertilizer Production	5	02.06.2025	06.06.2025
5.	Plant Health Management in Kharif Oilseed crops (online)	3	17.06.2025	19.06.2025
6.	Field diagnosis of pests for Integrated Pest Management	5	23.06.2025	27.06.2025
7.	Plant Health Management in Protected Cultivation	5	23.06.2025	27.06.2025
8.	Plant Health Management in Vegetables	5	23.06.2025	27.06.2025
9.	Plant Health Management in FCV tobacco	2	24.06.2025	25.06.2025
II.	**Farmers programme**			
1.	Sustainable Plant Health Management Practices in Pulses	4	01.04.2025	0404.2025
2.	Bio-input production and application in organic farming (Sponsored by ATMA, Nagpur, Maharshtra)	3	15.04.2025	17.04.2025
3.	Bio-input production and application in organic farming (Sponsored by ATMA, Nagpur, Maharshtra)	3	22.04.2025	24.04.2025
4.	Bio-input production and application in field crops (Sponsored by Rural access Pvt. Ltd., Ghaziabad)	3	28.04.2025	30.04.2025
5.	Sustainable Plant Health Management Practices in Organic Farming	3	26.05.2025	29.05.2025
6.	On-farm production of Bio-inputs and Application in Field Crops	3	04.06.2025	06.06.2025

- **Training programme report (officers)**

- **Organic Farming Practices and Biofertilizer Production**

Three training programmes on “Organic Farming Practices and Biofertilizer Production” (special programme sponsored under PM-PRANAM scheme, DOA, Maharashtra) were organized from 19.05.2025 to 23.05.2025 (5 days); 26.05.2025 30.05.20255 (5 days) and 02.06.2025 to 06.06.2025(5 days). A total of 74 agricultural officers from different districts of Maharashtra have participated. They underwent sessions on impact of high doses of fertilizers on soil ecosystem, INM and biofertilizers, biopesticides, organic manures for soil health improvement, integrated Farming systems, soil test based nutrient management, enrichment of compost, mass production techniques of biofertilizers, establishment of BRCs, use of remote sensing for soil health mapping, etc. This program shall be helpful to the participants in the knowledge on production and usage of organic fertilizers, application methods to reduce the use of chemical fertilizers. The officers have visited NIPHM laboratories, state fertilizer testing laboratory, soil health laboratory, PJTAU, and natural farming field visit. They experienced about organic and natural farming practices and preparations. Officers shall able to execution of the PM-PRNAM scheme to promote use of organic manures and encourages the adoption of sustainable agricultural practices.

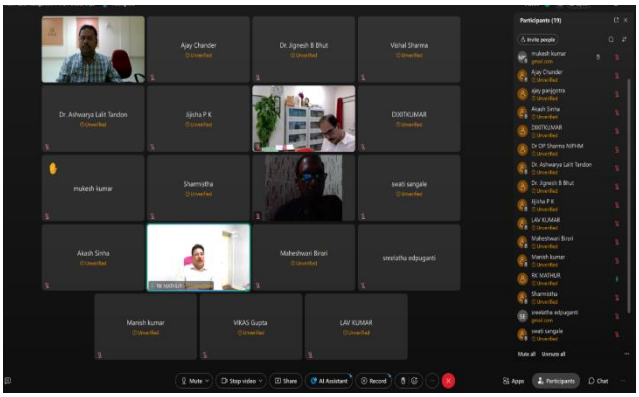


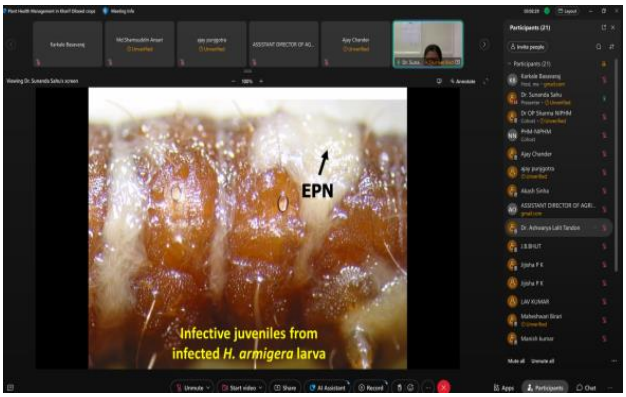

- **International training program on 'Biological Control and Plant Health Strategies'**

An international training program on 'Biological Control and Plant Health Strategies' was conducted at NIPHM from 26.05.2025 to 24.06.2025 (30 days). In this program, a total of 06 Officers from National Plant Protection Centre, Department of Agriculture, Ministry of Agriculture & Livestock, Samtokha, Bhutan have participated. The participants underwent session on Principles and strategies of biological control, integrated pest management, biopesticides, botanicals, nematode management, impact of climate change, and digital diagnostic tools. Further, hands-on practice on mass production techniques for various bioagents (Insect Parasitoids, Predators and biopesticides), quality control of biopesticides, use of drones and spraying equipment, and indigenous pest control preparations was carried out by the participants. Institutions like ICRISAT, PJTAU, ICAR institutes (IIRR, IIMR, IIOR), and Bioinput Resource Centre were visited by the participants. Participants gained comprehensive knowledge and hands-on skills in eco-friendly pest and disease management approaches, enabling them to implement and disseminate these techniques effectively in their respective regions. This special training was sponsored by Govt.of Bhutan as an initiative towards promoting sustainable agriculture and establish biocontrol lab at national level

- **Plant Health Management in Kharif Oilseed crops**

An online program on 'Plant Health Management in Oilseed Crops' was conducted from 17.06.2025 to 19.06.2025 (3 days) at NIPHM in collaboration with ICAR-IIOR. A total of 33 officers from different states have attended this program. Various topics of Plant Health Management viz., integrated pest management resistant genotypes, nutrient management, diagnosis and management of major diseases of agro ecosystem analysis and ecological engineering in oil seeds, use of entomopathogenic nematodes in insect pest management, on-farm production and use of bio fertilizers and bio pesticides in Kharif oilseed crops were covered.





- **Field diagnosis of pests for Integrated Pest Management**

An exclusive training programme was conducted on 'Field diagnosis of pests for Integrated Pest Management for officials of crop pest surveillance program (CROPSAP) Maharashtra from 23.06.2025 to 27.06.2025 (5 days). In this program a total of 24 field level officers from different districts of Maharashtra have participated. The participants underwent various aspects of pest monitoring practices like principles of IPM & insect pest management, field diagnosis of pests: AESA exercise, field visit and major diseases, integrated disease management in rice cotton and pulses, pest surveillance methodologies, pest diagnosis methods, recent pest pest incursions and use of NPSS app in decision making etc., were covered.

- **Plant Health Management in Protected Cultivation**

An exclusive training program on protected cultivation was conducted on 'Plant Health Management in Protected Cultivation' from 23.06.2025 to 27.06.2025 (5 days). In this program, a total of 7 officials from different states have participated and have undergone different sessions such as IPM in protected cultivation, integrated disease management in protected cultivation, role of biocontrol agents in protected cultivation, use of biofertilizers in polyhouse cultivation, predators in protected cultivation, nematode management in protected cultivation, role of insect hormones/pheromones in pest management, protected cultivation of high value vegetable crops. Opportunity and challenges in protected cultivation of flowers. This programme will be more useful for the trained personels as good agricultural practices coupled with integrated pest, disease and nutrient management practices are advocated as comprehensive solution.

- **Plant Health Management in FCV tobacco**

An off-campus training programme on Plant Health Management in FCV tobacco has been organized at Regional Manager Office, Mysore from 24.06.2025 & 25.06.2025 and a total of 103 field assistants have participated. Through this program created awareness on disease/pest/nutrient disorders and diagnosis, management practices as IPM/INM methods. All the participants have actively participated and explained about field level issues in tobacco crop health Management.

- **Farmers training programmes**
- **Sustainable Plant Health Management Practices in Pulses**

(Special program for Farmers of Buldhana Dist. Maharashtra, under SMART Project)

The training programs on "Sustainable Plant Health Management Practices in Pulses" for farmers of Buldhana District, Maharashtra, was organized by NIPHM under the SMART Project from 01st to 04th April, 2025 (4 days). A total of 30 farmers from Buldhana District of Maharashtra actively participated in the program. During the training, farmers got exposure to a range of sustainable plant health management (PHM) concepts, including Agro-Ecosystem Analysis (AESA) and Eco-Friendly Engineering (EE) for pest management, Integrated Nutrient Management (INM), Integrated Pest Management (IPM organic and natural farming practices along with certification processes, and low-cost methodologies for the production and application of bio-inputs. As a part of training program the FPO farmers visited the NIPHM laboratories and the Organic Farm at Maheswaram, RR District. The program aimed to provide participants with hands-on experience and enhance their knowledge on sustainable plant health management practices, protocols for on-farm production of bio-inputs, and their application techniques.

- **Bio-input production and application in organic farming (Sponsored by ATMA, Nagpur, Maharshtra)**

Two special training programs on "Bio-input Production and Application in Organic Farming" were organized for farmers of Nagpur District, Maharashtra, by the National Institute of Plant Health Management (NIPHM), sponsored by ATMA Nagpur. The programs were conducted in two batches, from 15th to 17th April 2025 and 22nd to 24th April 2025, each spanning three days. A total of 60 farmers from Nagpur District actively participated in the programs. During the training sessions, participants were introduced to Plant Health Management (PHM) concepts, including Agro-Ecosystem Analysis (AESA), different types of traps and their uses, natural farming preparations and botanical insecticides, as well as low-cost methodologies for the production and application of bio-inputs such as bio-pesticides, bio-fertilizers, bio-insecticides, entomopathogenic nematodes (EPNs), among others. The farmers also visited local Bio-input Resource Centre located at Kothur, Shadnagar (Ranga Reddy District), and various laboratories, field, and polyhouse at NIPHM.




- **Bio-input production and application in field crops (Sponsored by Rural access Pvt. Ltd., Ghaziabad)**

  A special training program on "Bio-input production and application in field crops" was organized for farmers of Sholapur District, Maharashtra, by the National Institute of Plant Health Management (NIPHM), sponsored by Rural access Pvt. Ltd., Ghaziabad. The program was conducted from 28th to 30th April 2025. A total of 21 farmers from various Sholapur District have actively participated in the programs. During the training sessions, participants were introduced to a variety of sustainable Plant Health Management (PHM) practices, including Agro-Ecosystem Analysis (AESA), different types of traps and their uses, natural farming preparations and botanical insecticides, as well as low-cost methodologies for the production and application of bio-inputs such as bio-pesticides, bio-fertilizers, bio-insecticides, entomopathogenic nematodes (EPNs) etc. As part of the training, the participants visited various laboratories, field, and polyhouse at NIPHM.

- **Sustainable Plant Health Management Practices in Organic Farming**

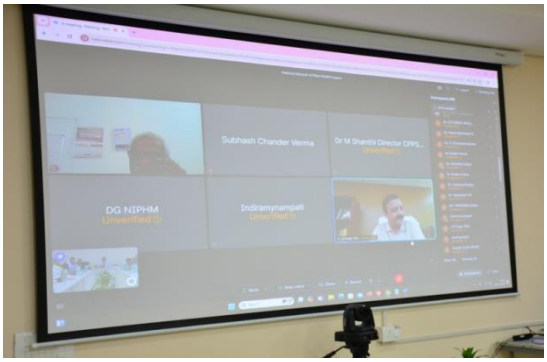
  A training programme on 'Sustainable Plant Health Management Practices in Organic Farming' (designed for FPO farmers, sponsored by SMART Project, Maharashtra) has been organized from 26.05.2025 to 29.05.2025 (4 days). A total of 45 participants from Pune Dist., Maharashtra have participated. They underwent sessions on organic and natural farming preparations & its application methods, agro-eco system analysis, Use of NPSS App for pest identification and management recommendations, on-farm production of different bioinputs and their application method and, Use of different kinds of pheromone traps for pest monitoring and management. This program was helpful to the participants in getting the hands-on experience and enhancing the knowledge on production protocols of bio-inputs and their application methods, organic and natural farming practices, establishment of BRC protocols, etc.

- **On-farm production of Bio-inputs and Application in Field Crops**

A special program for FPO farmers of Maharashtra has been organised from 04.06.2025 to 06.06.2025 (3 days). A total of 32 participants from Bhandara Dist., Maharashtra have participated. They underwent sessions on On-farm production of Bio-pesticides (*Trichoderma& Pseudomonas*), Agroecosystem analysis (AESA) & field observations, AESA Chart preparation and presentations, Demonstration of NPSS Application for pest identification and management recommendations, On-farm production of EPF, NPV and application methods , On-farm production of bio-fertilizers, On-farm production of predators and parasitoids, Mass production of Entomopathogenic Nematodes, Use of pheromones in insect pest management. This program shall be helpful to the participants in getting the hands on experience and enhancing the knowledge on production protocols of bio-inputs and their application methods.


- **Webinars/Workshop/Conference:**
  Workshop on 'National Network of Plant Health Experts':

The 4th workshop on 'National Network of Plant Health Experts' was conducted at NIPHM, Hyderabad in hybrid mode on 16.04.2025 to address national priorities in the plant protection sector. Shri Muktanand Agarwal, Joint Secretary Plant Protection DA&FW, Dr Sagar Hanuman Singh Director General NIPHM and Dr J P Singh PPA DPPQ&S have addressed the participants. They appealed the experts to deliberate and suggest solutions for plant protection issues of national priorities and recommendation for policy support. In this workshop a total of 86 plant health experts from ICAR institutes, SAUs, DPPQ&S and NIPHM have participated in hybrid mode.


FORTHCOMING PROGRAMMES :

S No	Name of the programme	No. of Days	From	To
I.	**Officers training programmes**			
1.	Field diagnosis of pests for integrated pest management	05	14.07.2025	18.07.2025
2.	Field diagnosis of pests for integrated pest management	05	28.07.2025	01.08.2025
3.	Agroecological approaches for pest management in Kharif crops	05	07.07.2025	11.07.2025
4.	Preparedness for Locust Pest Management (online)	02	09.07.2025	10.07.2025
5.	Integrated Pest Management (IPM) in Pulses (Online)	02	15.07.2025	16.07.2025
6.	Production Protocol for Entomo-pathogenic Nematodes	05	21.07.2025	25.07.2025
7.	Integrated Pest Management (IPM) in Mango	01	22.07.2025	22.07.2025
8.	Quality control of microbial biopesticides	05	28.07.2025	01.08.2025
9.	Establishment of Bio-input Resource Centers (BRCs)	05	04.08.2025	08.08.2025
10.	Pest diagnosis and advisories using NPSS App	01	06.08.2025	06.08.2025
11.	Problematic and beneficial nematodes in agriculture	05	18.08.2025	22.08.2025
12.	Strategies for Insect Biodiversity Conservation	03	19.08.2025	21.08.2025
13.	Production Protocol for Biofertilizers	05	08.09.2025	12.09.2025
14.	Production Protocol for biocontrol agents and microbial biopesticides	10	10.09.2025	19.09.2025
II.	**Farmers training programmes**			
1.	Establishment of Bio-input Resource Centers (BRCs)	03	11.08.2025 to 13.08.2025	
2.	On farm production of Bioinputs	03	07.07.2025 to 09.07.2025 20.08.2025 to 22.08.2025 10.09.2025 to 12.09.2025	
III.	**Certificate course- NIL**			
IV	**Webinars/Workshop-NIL**			
V	**Student training programme**			
1.	Sustainable Soil & Plant Health Management	02	30.07.2025	31.07.2025
2.	Advances in Integrated Pest Management	03	09.09.2025	11.09.2025

Pesticide Management Division

CAPACITY BUILDING PROGRAMMES:

Pesticide Management Division has organized following training programmes during the period **April-June, 2025.**

Sl. No.	Name of the programme	No. of Days	From	To
1.	Inspection and Sampling of pesticides under Insecticide Act, 1968 (Online mode)	3	07.04.2025	09.04.2025
2.	Role of PT and ILC in Quality Assurance and maintaining accreditation as per the ISO 17025:2017 (Online mode)	1	30.04.2025	
3.	Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis	2	05.05.2025	06.05.2025
4.	Instrumental Analysis (GC & HPLC) of pesticide Formulations	5	16.06.2025	20.06.2025

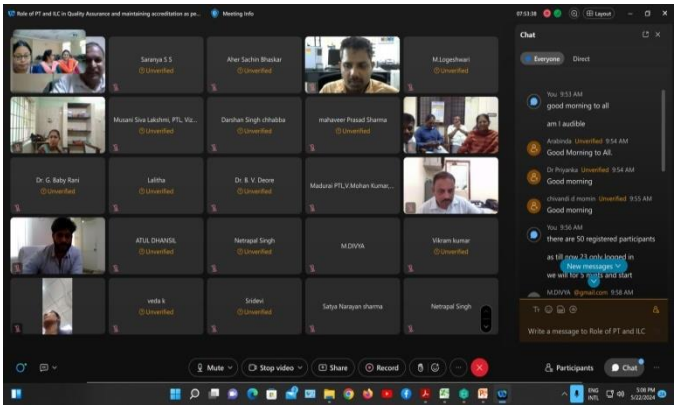
A. Scheduled training programme during April to June, 2025:

1**. Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP**):

The division has conducted 3 days training programme on "Inspection and Sampling of pesticides under Insecticide Act, 1968 (ISPP)" from 07.04.205 to 09.04.2025 (Online mode). A total of 33 officers have participated from the States Agriculture Department of Andhra Pradesh, Karnataka, Odisha, Tamil Nadu and Telangana. The participants were trained on inspection, sampling of pesticides for quality control and various aspects of the Insecticide Act, 1968 & Insecticide Rules 1971.

2. **Role of PT & ILC in Quality Assurance and maintaining accreditation as per the ISO/IEC 17025: 2017**

The division has conducted one day training programme on "Role of PT and ILC in maintaining accreditation as per the ISO/IEC 17025:2017" on 30.04.2025 (online mode). A total of 50 participants were participted from the State Agriculture Department of Andhra Pradesh, Gujarat, Kerala, Maharashtra, Meghalaya, Orissa, Rajasthan, Punjab and Tamil Nadu. The participants have trained on importance of participation of Proficiency Testing/ILC and the process of conduction of Interlaboratory comparision (ILC) programme.



Role of PT & ILC in Quality Assurance and maintaining accreditation as per the ISO/IEC 17025: 2017

- **Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis:**

The division has conducted 2 days training programme on "Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis" for the student/pvt. Industries under paid training programme from 05.05.2025 to 06.05.2025. The trainees were trained on sampling procedure of pesticide residues. A total of 10 private participants were participated.

Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis

- **Instrumental Analysis (GC & HPLC) of pesticide Formulations:**

The division has conducted 5 days training programme on "Instrumental Analysis (GC & HPLC) of Pesticide Formulation" for the student/pvt. Industries under paid training programme from 16.06.2025 to 20.06.2025. The training programme includes basic theory of Chromatography, method development and operation of Chromatography Instrument such as GC & HPLC for analysis of quality parameters of pesticide. A total of 10 participants (student/pvt. Industries) from Andhra Pradesh, Karnataka, Tamil Nadu, Odisha and Telanaga in this training programme were participated.

Fig: Instrumental Analysis (GC & HPLC) of pesticide Formulations

FORTHCOMING PROGRAMMES :

Sl. No.	Title of the Programme	Duration (days)	From	To	Eligibility Criteria
1.	Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP)	5	07.07.2025	11.07.2025	Agricultural / Horticultural Officers of State Dept./ designated Insecticide Inspectors
2.	Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025: 2017	5	14.07.2025	18.07.2025	Analysts / Scientists working in Govt. laboratories/Universities
3.	*Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis	2	14.07.2025	18.07.2025	Analysts / Scientists working in Govt. lab s/Universities
4.	*Handling/operation of GC-MS/MS for chemical (pesticide) analysis	5	14.07.2025	18.07.2025	Science Graduate with knowledge of chromatography
5.	Pesticide Formulation Analysis (PFA)	45	29.07.2025	11.09.2025	Analysts working at SPTLs / RPTLs/ CIL
6.	Testing of Physicochemical properties of Pesticide formulations	5	04.08.2025	08.08.2025	Analysts working at SPTLs / RPTLs/ CIL

7.	*Handling/operation of LC-MS/MS for chemical (pesticide) analysis	5	18.08.2025	22.08.2025	Science Graduate with knowledge of Chromatography
8.	Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP)	5	08.09.2025	12.08.2025	Agricultural / Horticultural Officers of State Dept./ designated Insecticide Inspectors
9.	Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025: 2017	5	15.09.2025	19.05.2025	Analysts / Scientists working in Govt. laboratories/Universities
10.	*Hands - on Training in pesticide Residue extraction Techniques for Agriculture Produce	10	15.09.2025	19.05.2025	Science Graduate

Plant Health Engineering Division

CAPACITY BUILDING PROGRAMMES:

Plant Health Engineering Division has conducted the following programs during the period Apr-Jun 2025

S No	Category	Name of the programme	No. of Days	From	To
1.	Officers	Pesticide Application Techniques and Safety Measures - Physical Mode	05	05.05.2025	09.05.2025
2.	Officers	RS & GIS applications in Plant Health Management-Vitual Mode	03	20.05.2025	22.05.2025
3.	Officers	Irrigation Systems and Advancements Physical mode on payment	03	11.06.2025	13.06.2025
4.	Students	Pesticide application Techniques & Safety Measures for Students (on payment)	08	30.05.2025	06.06.2025
5.	Farmers	Micro-irrigation-Special programme for farmers (on payment)	03	28.04.2025	30.04.2025
6.	Farmers	Micro irrigation	01	17.06.2025	17.06.2025

Drone Remote Pilot Certification

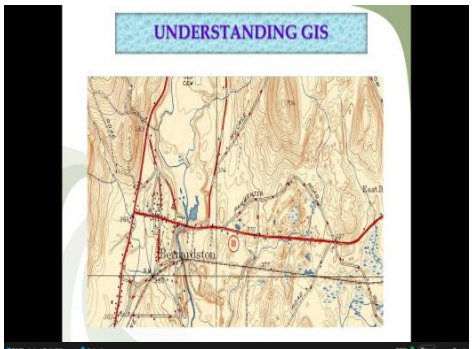
S No.	Name of Training Program/ Webinar	Duration (in days)	On/Off Campus
1.	Basic Remote Pilot Certification	07.04.2025 to 11.04.2025	On campus
2.		14.04.2025 to 18.04.2025	
3.		28.04.2025 to 02.05.2025	
4.		05.05.2025 to 09.05.2025	
5.		19.05.2025 to 24.05.2025	
6.		26.05.2025 to 30.05.2025	
7.		09.06.2025 to 13.06.2025	
8.		16.06.2025 20.06.2025	

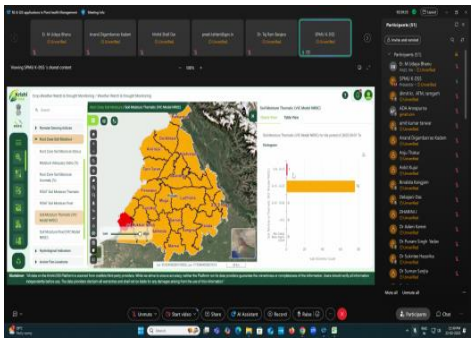
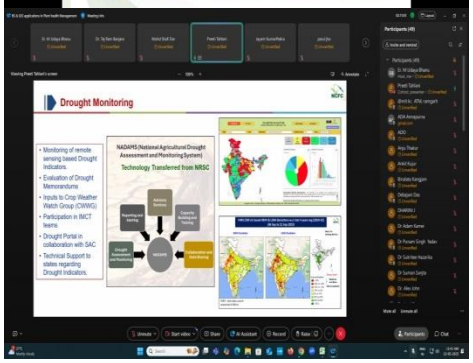
Description of the programme:

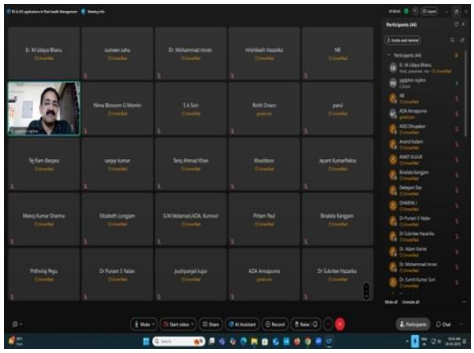
- **Pesticide application Techniques & Safety Measures:**
  PHE conducted five days on campus training programme from 5th - 9th May 2025 on "Pesticide Application Techniques and Safety Measures" for 09 officers (Male – 07 Female – 02) from 4 states namely (Telanagana-02, AP-02, West Bengal-03 and Rajasthan-02). The participants were trained on different aspects such as principles of pesticide application techniques, efficient spraying techniques, nozzle selection and calibration, safety measures while handling pesticides, pesticide formulation and compatibility with practical sessions.




- **RS & GIS applications in Plant Health Management:**
  An online training program from 20th to 22nd May 2025 was organized on "RS & GIS applications in Plant Health Management" for extension functionaries and state Agriculture Scientists from Dept. of Agriculture and Horticulture and State SAUs. Total 49 participants (Male – 23, Female – 26) participated from 13 states across the country. During the training special emphasis was given on the basic aspects of Remote Sensing, GIS, GPS and its applications. Case studies on Agriculture, crop acreage estimation, horticulture estimation and assessment, Fasal, crop insurance scheme, drought scenario and hands on session on Krishi DSS platform were handled by MNCFC team. A special lecture from ICRISAT was arranged on AI for crop production through Plantix.





- **Irrigation Systems and Advancements:**
  The Plant Health Engineering division conducted a 3 day officers training programme on "Irrigation Systems and Advancements" from 11th to 13th June 2025 for the officers from M/s Ambuja Foundation. Total 28 officers attended the programme. Micro-irrigation plays a very effective role for sustaining water resources and soil health. An efficient water management by using drip and sprinkler irrigation are vital in saving irrigation water and augmenting water productivity in both canal and rainfed commands. Micro irrigation can help in gaining maximum economic profits under scarce water supply conditions and climatic change.




- **Pesticide application Techniques & Safety Measures for Students (on payment):**
  The Plant Health Engineering division conducted a 8 day students training programme on "Pesticide Application Techniques and Safety Measures" for the students from St Thomas College of Engg & Technology, Chengannur, Kerala during 30th May to 6th June 2025. The training gave a deep insight on various plant protection methods with variety of applicators to the students, where they had practical exposure to real-time applications. The trainees were taken to various visits for exposure, which was unique experience for them. Total 29 students attended the programme.



- **Micro-irrigation-Special programme for farmers (on payment):**

Plant health engineering division conducted three-day physical training programme on “Micro-irrigation” for the farmers from Dehradun, Uttarakhand during 28th to 30th April 2025. Total 11 farmers (Male – 11) successfully completed the training programme. The participants were trained on scope of micro-irrigation, various procedures for maintenance of the system for trouble-free operation, automated irrigation system etc. Practical exposure was provided to the participants through field visit to NIPHM farm, Water Technology Centre, PJTSAU etc. Various labs of the Institute was also visited by the participants.



- **Micro irrigation :**

Plant Health Engineering division conducted farmers awareness programme on "Micro-irrigation" on 17th June 2025. Total 31 farmers from ATMA, Tamil Nadu participated in the programme. The trainees were briefed on micro-irrigation components, drip systems, automated irrigation systems and its demonstration etc. Practical awareness was created by experiencing them on real-time issues on irrigation and finding suitable solutions. The participants were very much benefitted with the programme.


- **Drone trainings**
- **Basic Remote Pilot Certification:**

This training is part of the Drone Academy who trains and certifies the Drone Pilots for use of drones in various applications. The academy has been certified as RPTO (Remote Pilot Training Organization) in association with an Industry partner (M/s Marut Drones). Three training programmes on Basic Remote Pilot Certification were conducted, first programme from 07-04-2025 to 11-04-2025 with 03 participants (03 male), second programme from 14-04-2025 18-04-2025 with 03 participants (03 males) and third programme from 28-04-2025 to 02-05-2025 with 03 participants (03 male). Lectures were arranged on topic viz., Introduction on international civil aviation organization, RPAS with in ICAO frame work, formation of RPAS, Classification of drones, Drone operation zones, ATC procedure , radio telephony and flight radio telephony, Basic principles of flight, Types of wind designs, Battery maintenance, Rotorcraft operations and aerodynamics, Application of drones in each sector, Hybrid operations and aerodynamics, Weather and meteorology, Risk assessment and analysis safety management system, drone maintenance etc. The lab assembly and maintenance of drones and simulation experiments for drone flying also was included in the curriculum. Exclusive 3 days of on-field flying classes also were conducted in dual as well as solo mode.

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This training is part of the Drone Academy who trains and certifies the Drone Pilots for use of drones in various applications. The academy has been certified as RPTO (Remote Pilot Training Organization) in association with an Industry partner (M/s Marut Drones). Three training programmes on Basic Remote Pilot Certification conducted, first from 5th to 9th May 2025 (3 male), second from 19th to 24th May (4 male) and third from 26th to 30th May 2025 (3 male). Lectures were arranged on topic viz., Introduction on international civil aviation organization, RPAS with in ICAO frame work, formation of RPAS, Classification of drones, Drone operation zones, ATC procedure , radio telephony and flight radio telephony, Basic principles of flight, Types of wind designs, Battery maintenance, Rotorcraft operations and aerodynamics, Application of drones in each sector, Hybrid operations and aerodynamics, Weather and meteorology, Risk assessment and analysis safety management system, drone maintenance etc. The lab assembly and maintenance of drones and simulation experiments for drone flying also was included in the curriculum. Exclusive 3 days of on-field flying classes also were conducted in dual as well as solo mode.




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Educational Programs:

PGDPHM/DPHM:

- PGDPHM regular classes were organized.
- Examnation were counducted

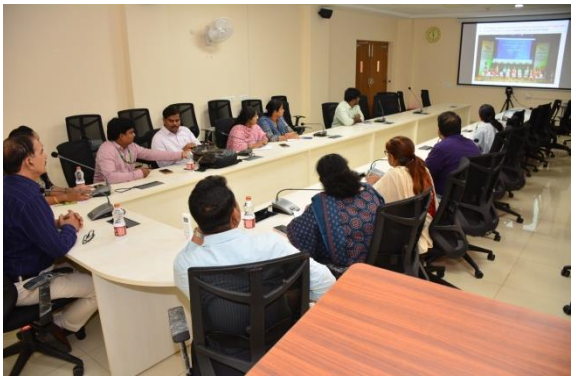
FORTHCOMING PROGRAMMES:

S.No	Title of the Programme	Division	From	To	Eligibility criteria	Course Coordinator & e-mail
1.	Pesticide application techniques and safety measures	**PHE**	07.07.2025	09.07.2025	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs	Er. M. Udaya Bhanu sopheniphm2-ap@nic.in
2.	Digital Agriculture	**PHE**	14.07.2025	16.07.2025	State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs50	Er. Liyakhat Ali Ahmed Shaik adict-niphmhyd@gov.in

3.	Post-harvest management and storage techniques	**PHE**	04.08.2025	06.08.2025	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs, NGOs	Er. Haneefa Begum asopheniphm2-ap@nic.in
4.	Pesticide application techniques and safety measures	**PHE**	15.09.2025	19.09.2025	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs, NGOs	Er. Haneefa Begum asopheniphm2-ap@nic.in
5.	Professional Agri spraying through drones (Only on payment basis)	**PHE**	September-2025	September-2025	RPC (Drone pilot) holders	Er. Haneefa Begum asopheniphm2-ap@nic.in
6.	Pesticide application techniques	**PHE**	**August-2025**	**August-2025**	Farmers / FPO	Er. M. Udaya Bhanu sopheniphm2-ap@nic.in
7.	Micro irrigation	**PHE**	It was organized on June 17th 2025		Farmers / FPO	Er. Govind Maurya asopheniphm1-ap@nic.in

- **International Day of Plant Health (IDPH-2025):** International Day of Plant Health (IDPH-2025) was observed with great enthusiasm at the National Institute of Plant Health Management (NIPHM) on 13th May 2025. The event commenced with welcome address by Dr. O.P. Sharma, Director (Plant Health Management), who highlighting the significance of the day in promoting awareness about plant health as a key component of sustainable agriculture and food security. A total of 24 faculty members of NIPHM actively participated in the event. As part of the celebrations, an inter-college quiz competition was organized and participated by 22 students of PGDPHM and nearby , Agriculture and Horticulture colleges. The quiz aimed to engage young minds and enhance their knowledge on various aspects of plant health, crop protection, and sustainable agricultural practices. A guest lecture was delivered by Dr. Rajan Sharma, Principal Scientist at ICRISAT, Hyderabad, on the topic "Importance of Plant Health in the One Health Framework." He emphasized the interconnections of plant, animal, and human health and stressed upon the need for integrated approaches to ensure global health and food safety. The event concluded with the distribution of prizes to the winners of the quiz competition. The program completed with concluding remarks by Dr. S.H. Singh, Director General, NIPHM, who commended the efforts of all participants and organizers for making the event a success and reiterated the institute's commitment to promoting plant health management at all levels.

- **Interactive session on NPSS App :** NIPHM organized a special interactive session with officers of NIPHM, CIPMC, Hyderabad on 'Understanding and Utilization of the NPSS Application' on 19th May 2025. The session featured insightful presentations by officials from CIPMC, Hyderabad- Mrs. Suneetha R (PPO & Officer-in-Charge), Mr. Venkat Reddy (PPO), and Mr. Uday Shankar (APPO). They provided a comprehensive overview of the NPSS App. and its key functionalities. The session was attended by 13 officers including Dr. O.P. Sharma, Director PHM and faculty of NIHM and CIPMC and discussed to popularise and enhance the use NPSS app to enhance their existing knowledge of the NPSS App.



Research & Development

AICRP- Biocontrol is continued during the quarter. Various aspects of biocontrol experiments of biocontrol to be conducted at NIPHM planned and approved 3 trails on maize, chilli and tomato crops.

Participated in 34th Annual group meeting from 11th to 12th, June, AAU, Assam.

Pesticide Formulation and Residue Analytical Centre (PFRAC):

Pesticide Formulation and Residue Analytical Centre (PFRAC), Pesticide Management Division, is an accreditated laboratory in accordance to ISO/IEC 17025:2017.

During the period the laboratory has collected 300 samples (Fruits, vegetables, cereals, pulses, milk and water) from Medchal-Malkajigiri Farm gate, Saidabad and Alwal market Hyderabad and Organic Outlets of Hyderabad under Central Sector Scheme "Monitoring of Pesticide Residues at National Level (MPRNL). The samples were analyzed for pesticide residues by LC-MS/MS and GC-MS/MS.

A total of 155 samples (fruit and vegetables) were received from ANGRAU and 139 water samples (extract) from CSIR-NEERI. The samples were analyzed under MPRNL scheme. The division has also received 72 tobacco samples from Tobacco Board, Guntur and the samples were analyzed.

A total of 11 botanical/bio-pesticides samples were received from various state of India. The samples were analyzed by GC-MS/MS and LC-MS/MS. A total of 22 pesticides formulation samples were received from National Seed Corporation, Pvt. Laboratories for quality test of pesticide product. All the samples were analyzed. The samples received under Interlaboratory Comparison programme were also analyzed.

A total of 164 soil and turmeric samples received from Meghalaya under Horticulture Cluster Development Program, National Horticultural Board were analysed for presence of heavy metals.



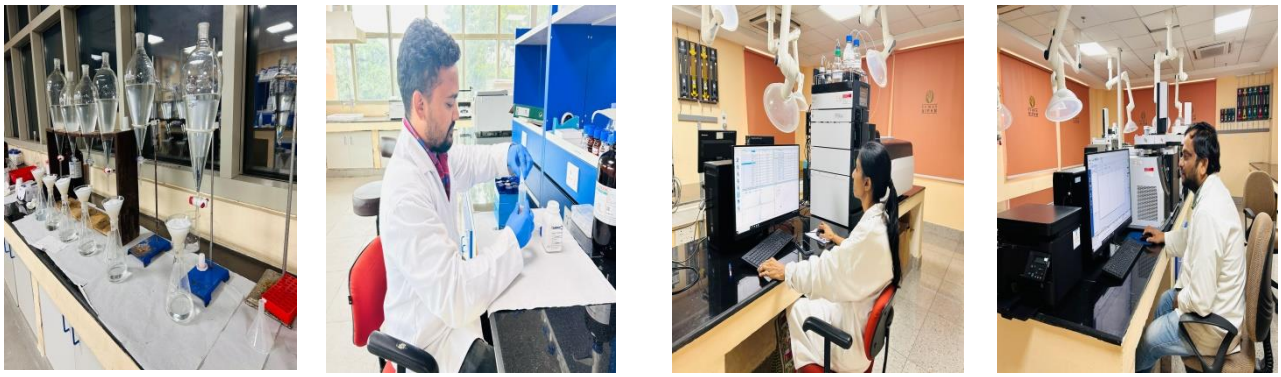



Fig: Pesticide Formulation and Residue Analytical Center laboratory

Proficiency testing (PT) programme on Pesticide Residues Analysis (PT-PRA):

Laboratory organized Inter laboratory comparision (ILC) on Red Chili Powder during the period and participated by 12 laboratories. The laboratories performance were evaluated through statistical technique i.e z score. Laboratory has also conducted trials on Mango (12 pesticides) for PT progrmme to be conducted.

Proficiency testing programme on Pesticide Formulation Analysis (PT-PFA):

Laboratory has organised PT PFA (May 2025 programme) for the pesticides viz. Cypermethrin Technical, Pretilachlor EC and Chlorpyrifos EC (PTC/PF/01, 02 & 03/24-25). Thirty one laboratories (Govt. and Private Laboratories) participated.

Laboratory Accreditation: NABL team has assessed the Proficiency Testing Centre (PTC) for laboratory accreditation as per the ISO/IEC 17043:2023 on 10th & 11th May 2025. The laboratory is accreditated as per the ISO/IEC 17043:2023 (PT provider).

Meeting/conferences attended: Meeting conducted by BIS-FAD 1, Panel I & VI for finalization of specification for new formulation.

Lab Activities

- Maintaining/Rearing of stored grain insect cultures viz. *Tribolium*, Rice weevil, Khapra, Pulse beetle, Cigarette beetle, saw toothed grain beetle and rice moth.
- Fruit fly lure preparation (ME & CUE) and sale
- Urban pest insect box preparation
- Maintenance of vermicompost unit and sale
- Disease specimen- Herbarium collection
- Maintenance of vermicompost unit at NIPHM and Staff Quarters

- **QC lab for bio-pesticides:** During the quarter, 33 biopesticide samples other places and 10 from NIPHM were received and tested for various quality parameters.
- **Biofertilizer Laboratory:** As a licensed Biofertilizer production unit, biofertilizers like Rhizobium, Azotobacter, Azospirillum, Phosphate Solubilizing Bacteria (PSB), Potassium Releasing Bacteria (KRB), Zinc Solubilizing Bacteria (ZnSB) and Mycorrhiza (VAM) are produced at NIPHM and provided to beneficiaries like farmers and other stakeholders such as tobacco board.
- **Bio-pesticide laboratory:** Activities like demonstration of on-farm production of *Trichoderma* and *Pseudomonas* to trainees, maintenance of mother culture of Trichoderma and Pseudomonas are performed in the lab. Bio-inoculum startup kits were provided to 113 trained officers / FPO farmers from different states for demonstration.
- **Host, predators and parasitoids lab:** NIPHM is maintaining and producing various parasitoids and predators for insect pest control. These beneficial insects, biocontrol agents were supplied to trainees and farmers for use in their fields. In this quarter, eight farmers/ Scientists have taken different predators and parasitoids from NIPHM.
- **Nematology Laboratory.** As a part of the regular activities soil testing is done for nematode population and advisories were given, accordingly.

Faculty Achievements

Staff corner: AICRP workshop was attended by Dr. N. Lavanya, AD-PHM (Agri.) at Assam AAU.

Visits:

The details of visitors visiting NIPHM from April to June, 2025 were given below:

- **Students Visit**: 105 students from Maharasthra , 37 students from Warangal Dist, Telangana visited NIPHM
- **Farmers Visit:** During this quarter, 27 farmers from Odisha and 152 farmers from Tamil Nadu visited NIPHM biocontrol lab, insect museum, demonstration farm etc.

Other Activities:

I. Farmer Advisory Cell Activities:

Farmer Advisory Cell is maintained by PHM division and faculty are interacting with farmers about their queries related to plant protection; bioinputs usage etc. 34 farmers approached NIPHM through telephonic communication during thequarter.

II. NIPHM Instructional farm

PHM division is maintaining IPM demonstration farm and polyhouse with diversified crops. The farmers and trainees visit the farm for observation and practical sessions on AESA, Ecological engineering, collection of insect pests and beneficial insects.

III. Polyhouse (Protected cultivation)

During this quarter, crops viz., tomato and cucumber were raised and monitored with necessary IPM practices for the pests control.

A view of Paddy crop in NIPHM farm

Maize and turmeric intercropping

Other Significant Activities

- One day event on **World Bee Day** was organized jointly by NIPHM, MANAGE and Telangana Bee Hub Society at NIPHM on 20.05.2025. The event was graced by Director General NIPHM on 20.05.2025. Total 85 participants including progressive bee keepers and farmers have attended the event from various government organizations.

- Memorandum of Understanding (MoU) between National Institute of Plant Health Management (NIPHM), Hyderabad, Indian Pest Control Association (IPCA) and EPCORN was signed on 26th May 2025 for collaborations in capacity building, research and upgrading the laboratories.

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