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Plant Health
NEWS LETTER

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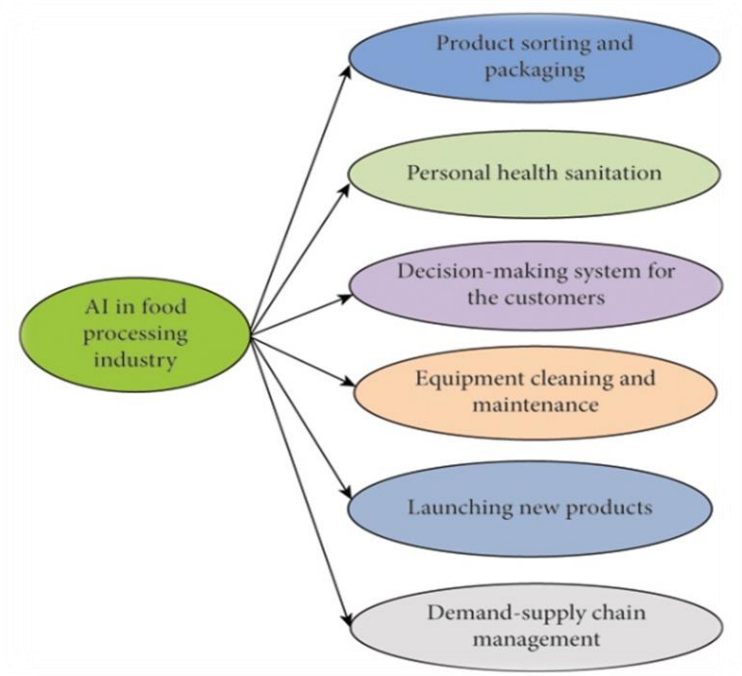
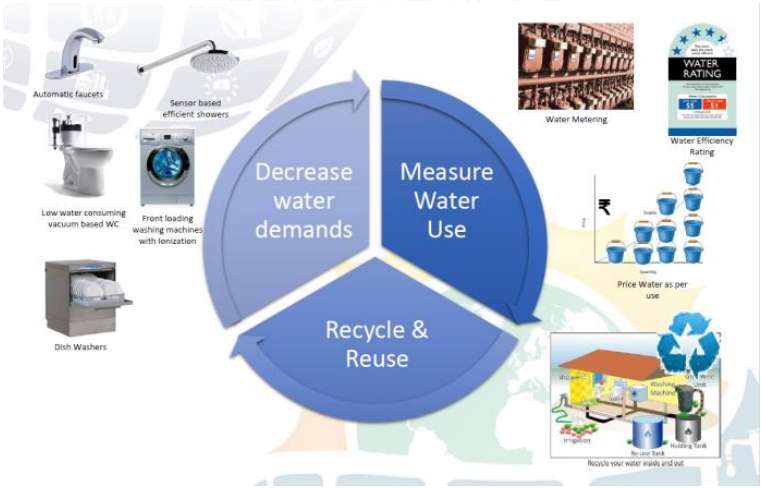
AROUND THE WORLD



THEME ARTICLE



SPECIAL EVENTS

WHAT'S INSIDE

The agricultural sector is facing many challenges including the inadequacy of water resources 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 proposed 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 especially presented 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. Although being the agriculturist, we know that around 70-75% of water is held by the agriculture sector. Hence, 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 को उत्पादन प्रक्रिया के लिए आवश्यक जल संसाधनों की अपर्याप्तता और खेती योग्य स्थान की निर्भरता सहित कई चुनौतियों का सामना करना पड़ रहा है। इसके अलावा, जलवायु परिवर्तन के प्रभाव से शुष्क क्षेत्रों की चुनौतियाँ और भी बदतर हो गई हैं, जिनमें पानी की भारी कमी और भूमि क्षरण की विशेषताएँ हैं। चूँकि जलवायु संबंधी चुनौतियाँ सतत कृषि विकास में बाधक हैं, इसलिए प्राकृतिक संसाधनों और कृषि-पारिस्थितिकी प्रथाओं की सुरक्षा पर अधिक जोर देने की आवश्यकता है। इसके अलावा, खाद्य सुरक्षा उद्देश्यों के लिए, उत्पादन दक्षता, उत्पादकता और गुणवत्ता बढ़ाने के लिए एक टिकाऊ 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।

जहां तक जल प्रबंधन का सवाल है, खाद्य उत्पादन में आवश्यक वृद्धि में वास्तविक योगदान विशेष रूप से कृषि जल प्रबंधन के सुधार और विस्तार से आना होगा - भंडारण से प्रबंधन तक - उत्पादन क्षेत्रों में जो जलवायु परिवर्तनशीलता के लिए सबसे अधिक संवेदनशील हैं, आधुनिकीकरण , मौजूदा सिंचाई और जल निकासी प्रणालियों का उन्नयन या पूरक। कृषि और भोजन के लिए जल स्रोतों के स्थायी प्रबंधन पर विशेष ध्यान देने की आवश्यकता है। कृषि और छोटे किसानों की बड़ी आबादी को जलवायु परिवर्तन के प्रभावों के प्रति अधिक लचीला बनाने के लिए भूजल के प्रबंधन, गैर-पारंपरिक जल के सुरक्षित उपयोग के साथ-साथ जल भंडारण बढ़ाने के सभी आकारों के विकल्पों की बारीकी से जांच करने का प्रस्ताव है।

इस अंक के थीम लेख में विशेष रूप से सिंचाई प्रणाली और जल प्रबंधन को प्रस्तुत किया गया है जो कृषि खाद्य उत्पादन की रीढ़ है। जल संकट का वर्तमान परिदृश्य न केवल कृषि क्षेत्र के लिए बल्कि घरों और औद्योगिक क्षेत्र के लिए भी एक बड़ी चिंता का विषय है। यद्यपि कृषक होने के नाते, हम जानते हैं कि लगभग 70-75% पानी कृषि क्षेत्र के पास है। इसलिए, 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 जो जड़ क्षेत्र में पानी की आपूर्ति करती हैं और उत्पादन को बढ़ाती हैं जो हम सभी का अंतिम लक्ष्य है।

(Dr. Sagar Hanuman Singh IPoS)
Director General

EFFICIENT USE OF WATER FOR FOOD PRODUCTION

Er. Govind Kumar Maurya, ASO-PHE

Introduction

Food production under unfavourable climatic conditions and limited water resources cannot be sustainably possible unless crop water management techniques are designed to meet the present growing demands of water for increased food production. Water is essential for every form of life, for all aspects of socio-economic development, and for the maintenance of healthy ecosystems. While there are sufficient freshwater resources at the global level to enable continued agricultural and industrial development, the long-term sustainable use of water resources is of growing concern. This is particularly the case when considering the intrinsic disparity in water quality and availability across regions.

The deficit between available water and water demand is growing and is expected to increase soon. Water scarcity will reduce agricultural production and threaten the country's food security; therefore, the best use of water must be made for efficient crop production and higher yields. The present status of agricultural water use will be outlined to point out the main factors of inefficiency in the use of irrigation water such as losses in the conveyance of irrigation water; low efficient on-farm irrigation methods, inefficiency related to the irrigation systems setup, and losses due to inadequate irrigation practices.

Managing water sustainably is key to future food and Agriculture

Agriculture production is highly dependent on water and increasingly subject to water risks. It is the largest using sector and a major polluter of water. Improving agriculture water management is therefore essential to a sustainable and productive agro-food sector.

At present 55% of the food comes from areas with a form of water management and 45% from areas without any (only rainfed) water management system. At the cultivated area of about 1,500 million hectares (ha) most of the cultivation takes place under rainfed conditions without any water management system (1,100 million ha). About 300 million ha is provided with an irrigation system (among which 60 million ha with drainage as well) and an additional 130 million ha is provided with a drainage system only. Achieving the required increase in food production seems to be possible, provided that improvements in interfering channels and overcoming the issues:

Issues and Challenges

Water scarcity and conflicts. Water resources in India are ridden with competition and conflict at all levels – between states (water is a "state subject" in the Constitution), between sectors (industries versus farmers; cities versus rural areas), and within irrigation command areas. On a national basis, the total demand for water resources is expected to exceed the utilizable potential by 2050. Groundwater is being depleted at an alarming rate. A nationwide assessment (2004) found 29 percent of groundwater blocks to be in the semi-critical, critical, or overexploited categories, with the situation rapidly deteriorating. At the same time, diversion and contamination of surface water threaten the health of rivers and the people dependent upon them.

Limited capacity to deal with new developments and pressures such as population growth, economic development, and climate change. Many of the state agencies responsible for irrigation and water supply are overstaffed but also underqualified in certain critical areas as a result of hiring freezes. For example, there is little capacity for social and environmental management, economics, modeling and decision sciences, as well as inadequate knowledge of the current best practices in water management. The involvement of stakeholders most affected by poor water management (e.g., water user associations, village water committees) is still the exception rather than the rule. Similarly, the capacity available in the private sector has been barely tapped as a means of improving accountability and efficiency.

Government Strategy

The Government's National Water Mission under the National Action Plan on Climate Change addresses many of these issues. With its main objective of "conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management," it has the potential to shift focus from supply augmentation to efficient utilization of available resources.

The Mission identifies the following five goals:
(i) comprehensive water database in the public domain and assessment of the impact of climate change on water resources;
(ii) promotion of citizen and state action for water conservation, augmentation and preservation;
(iii) focused attention to vulnerable areas including over-exploited areas;
(iv) increasing water use efficiency by 20%, and
(v) promotion of basin-level integrated water resources management.

National Water Commission to monitor compliance with conditionality attached to central funding, systematic mapping of aquifers and disclosure of this information to farmers and other water users, the establishment of Aquifer Management Associations, separation of electricity feeders for irrigation and other uses, and targets for reuse water. As encouraging as these pronouncements and plans are, performance in the water sector in India has typically lagged behind policy pronouncements and targets. Perhaps more significant, then are the efforts underway at the national level and in some states to:

- Improve the capacity of institutions responsible for monitoring and analyzing data on groundwater resources
- Improve hydrological and meteorological forecasting
- Enhance disaster preparedness
- Improve policies and legal frameworks for regulation of water resources
- Establish state regulatory agencies and river basin authorities and build their capacity
- Clean-up rivers
- Build capacity of water user associations to manage irrigation systems
- Implement state Sector-Wide Approaches (SWAps) governing investments in and management of rural water and sanitation schemes
- Demonstrate sustainable approaches to development and management of urban water supply
- Recent attention to climate change is also encouraging. A number of studies are being carried out to analyze the impacts of climate change at the river basin, sub-basin, city and community level as the basis for developing strategies for adaptation. In addition, the private sector is conducting water audits and developing strategies to improve efficiency, reduce their "water footprint", and enhance the sustainability of water resources.

Opportunities for Improving Water Resources Management and Service Delivery
To improve performance, reduce water-related shocks, and increase resilience and adaptation to growth and change, more comprehensive reform is needed in the following areas:

- Enabling water policies, institutional and legal frameworks to improve the stewardship of the resource base and service delivery for end users, and to facilitate inter-jurisdictional management and development.
- Inter-sectoral approaches at the basin level that integrate surface water with groundwater, urban with rural, quantity with quality, and minimum flows and ecosystem services with river regulation for hydropower, flood management and abstraction for water supply and irrigation.
- Restructuring of public sector institutions (including through capacity building and the strategic realignment of incentive structures and skills mixes) and the establishment of new institutions (including regulatory authorities, water users associations, river basin agencies, and public-private partnerships).
- Decentralized and participatory service delivery mechanisms, with a particular focus on improving customer/user service, enhancing accountability and transparency, and extending service to the poor.
- Modern management practices and technology applications viz. sensor based Drip, Sprinklers irrigation, including improved operations and maintenance through asset management planning, and the development of a comprehensive knowledge base and decision support tools.
- Financial sustainability of resource management and service delivery through rational charges and tariffs and improved financial management, including removing distorting subsidies and moving towards user charges that reflect at least O&M costs.
- Openness and cooperation on water resources data, research and knowledge sharing, not only within India but also with neighbors in the region.

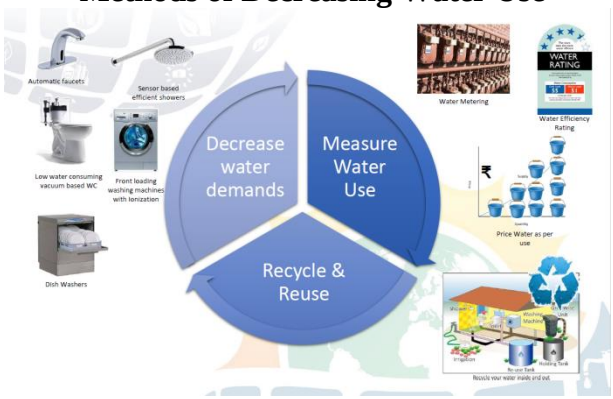
Water Facts and Figure

- **Water use grew at almost twice the rate of population increase** in the last century. Although there is no global water scarcity as such, an increasing number of regions are chronically short of water. Other regions suffer the consequences of unmet demand due to infrastructure or institutional inadequacies.
- **On average, agriculture accounts for 70 percent of global freshwater withdrawals**. In the last 30 years, food production has increased by more than 100 percent. FAO estimates that about 60 percent more food will be needed by 2050 to meet the food requirements of a growing global population.
- **Water demand is therefore set to increase**. FAO projects that irrigated food production will increase by more than 50 percent by 2050, but the amount of water withdrawn by agriculture can increase by only 10 percent, provided that irrigation practices are improved and yields increase.
- **The world contains an estimated 1 400 million cubic km of water. But only 0.003% of this vast amount, about 45 000 cubic km, are "fresh water resources"** that could be used for drinking, hygiene, agriculture and industry. But not all of this water is accessible because part of it flows into remote rivers during seasonal floods.
- **It takes between 1 and 3 tonnes of water to grown 1kg of cereal**. A kilogram of beef takes up to 15 tonnes of water to produce. FAO estimates that between 2 000 and 5 000 litres of water are needed to produce a person's daily food.

Recommendations for water conservation

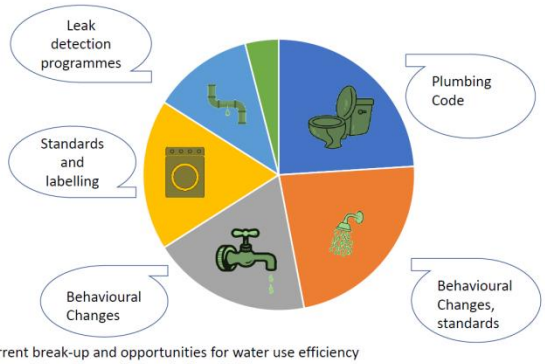
- Water for boiler auxiliary (discharged as waste) should be reused. High water loss (80-50%) in ash handling should be brought down (overflows should be recycled, leakages plugged, Specific water consumption brought down)
- Cooling Towers: COC must be increased, Specific water consumptionshould be reduced (to about 1.5 m3/MW), overflowsmust be checked.
- Township: Reductionin per capita water consumption (to 150 lpcd).
- Recycling of about 64000 m3/day of wastewater being discharged from the plant to achieve Zero discharge through a treatment & recycling plant.
- Township STP discharge water (suitable for horticultural uses) should be reusedentirely thus savingsignificant water and ensuring zero discharge

Methods of Decreasing Water Use



Capture the loss

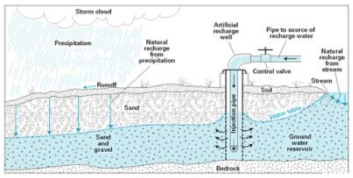
Urban water use efficiency –Indoor



Current break-up and opportunities for water use efficiency
Source: Water Research Foundation, 2016

Urban water use efficiency -Outdoor

Rainwater Harvesting



Groundwater Recharge


Make Checkdams


Photo Credit: The Hindu, ATREE

Conclusion

At the moment global food production is sufficient to feed the Worlds' population. Food shortages are of a regional and local nature and although they may be caused by drought or other climatologic phenomena they can be prevented when sufficient action is being taken. First responsibility to take action rests with the National and/or Regional Governments in accordance with the international human rights law. Over the past years an impressive increase in food production has been achieved. However, the growth of the Worlds' population and the increase in the standard of living, especially in the emerging countries requires that food production will have to be doubled over the next 25 – 30 years. It is therefore required that governments have a clear policy on the level of food self sufficiency that they would like to achieve and on the measures that would be required to achieve this. In addition it will be of importance that they enable that the remaining food can be imported and sold at affordable prices. There is a common understanding that 80-90% of to increase in food production will have to come from existing cultivated land and that the remaining has to come from land reclamation. This will require a significant improvement in water management measures and their operation, maintenance and management. In principle this can be achieved and quite some governments consider that nowadays as a key priority.

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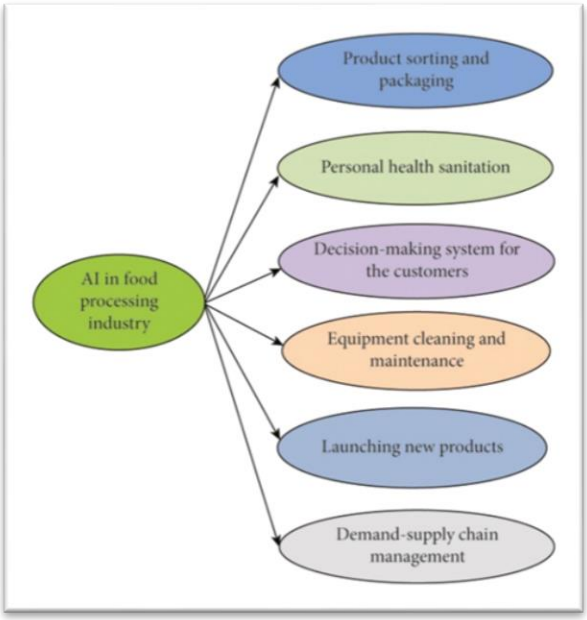
Around the World

ARTIFICIAL INTELLIGENCE IN FOOD PROCESSING

Er. Shaik Hnaeefa Begum, Assistant Scientific Officer
Plant Health Engineering Division

The food processing industry is one of those fields where AI can make an incredible impact on day-to-day operations and ultimately transform business in a major way. Artificial intelligence (AI) is transforming the industry by automating tasks and making them more efficient. The food industry is booming with AI companies. There are many benefits to using artificial intelligence in the food business, but there are also some significant problems that need to be addressed before it can become mainstream.

The importance and application of different areas of artificial intelligence such as pattern recognition, data science, deep learning, machine learning, and robotics in the food processing industry. Along with food processing, the food handling industry is also important where AI plays a key role in handling the entire processing unit task. There are some important applications taken from the food processing and handling industry as



Important AI applications in food processing and food handling

AI applications in food industry

1. **Trend Analysis**

The very first use of AI in the food industry is that it helps FMCG businesses to analyse the prevalent customer demands and desires. On the basis of big data analytics and machine learning models, AI can extract useful insights pertaining to the needs and desires of the customers that lead to product development.

Using the technique of trend analysis, food businesses can serve the customer needs efficiently and correctly target the right audience present across the market.

2. **Efficient Speed**

One of the biggest benefits of AI in the food industry is that it induces a speedy process in the production process. Unlike earlier when humans had to perform all the processes by hand, the food industry witnessed numerous mishaps and a slow production rate across the year. However, with the coming of AI and automated machines, machines can rapidly produce greater outcomes and produce more products at the same time. This, in turn, benefits the business houses and generates more revenue.

3. Quality Inspection

Another tedious task that was earlier handled by humans is quality inspection. The food industry is all about quality and maintaining the right standard as prescribed by the regulatory authorities. However, with the mass production of food items and products, quality can seldom be hampered and ignored. But this is not a drawback when the production process runs in compliance with AI-empowered machines.

4. Controlled Cultivation

Even though the process of cultivation is not entirely a part of the food industry, it still largely impacts the finished product and its quality. Cultivation requires growing food crops to use them in the production process afterward. Owing to weather changes and alternate conditions, sometimes crops can fail and lead to a poor-quality yield. By employing AI in food science and technology, controlled cultivation can be performed. This leads to a controlled quality that is predetermined by the cultivator to prevent any crop damage under controlled environmental conditions.

5. Smart Sensors

With the help of smart sensors driven by AI, the food industry and its processes can be timely monitored and managed. From the very beginning to the final stage of producing and packaging the finished product, smart sensors keep an eye throughout the clock in order to report if something wrong or unusual happens. This can refer to anything and everything including quality defaults or electric cut-offs.

The use of AI in the food industry regarding smart sensors is particularly a boon for all food industries as they not only help in the detection of unusual activities but also negate the idea of quality inspectors throughout the production chain.

6. Investigative Exploration

Faults are inevitable in any type of industry. Be it in the food industry or a clothing manufacturing plant, problems can occur at any point in time. However, it is possible that the causes for these defects might be unknown.

Using AI, food industries can investigate such cases and explore the hidden reasons behind any mishaps. By studying past data records and evaluating them, AI applications can perform investigative exploration and yield results rapidly.

7. Segregation

One of the most important steps to getting started with food production is food segregation. Separating and sorting food ingredients is required for an efficient and organized production process. Earlier to segregate, humans were employed to perform the task manually. On the contrary, customized machines using AI algorithms are used today to segregate food materials that are later mixed to produce products.

The task of segregation was a time-taking process in the past. But today it requires lesser time and lesser efforts which has led to substantial preservation in resources of the industries dealing with food production.

8. Tracking Food Supply Chain

Tracking a courier or a parcel, food businesses can track the supply chain to ensure that their raw material is moving in the right direction and at the right speed. A lot of times, raw materials get displaced or dispatched to other locations. This can severely affect the production process by delaying the final outcome. From packaging material to

production ingredients, food manufacturers can now track food supply chains with the help of customized AI applications and portals.

9. Automated Packaging

The traditional system of packaging products where a team of 2 would place items in a box and seal the box, the current scenario has drastically evolved with the emergence of intelligence automation.

Today, automated machines are aware of the exact quantities that they must release in the packaging container and take less than a quarter of a minute to pack a set of items. With the help of fast and efficient machines, packaging has become a lot smoother and speedier.

10. Predictive Management

For ages, food industries have suffered huge losses only because they were unaware of the future consequences of certain practices. From crop failure to electricity cut-offs, food industries can be affected in many ways. To prevent such crises, predictive analytics helps food industries to employ predictive measures to forecast possible outcomes.

This has helped many such industries to prepare themselves for otherwise unforeseen circumstances.

Future of AI in food processing industry:

The future of artificial intelligence is expansive as it has so much to develop into. Yet, the kind of evolution it has triggered in various sectors is the real determinant as to how prominent it can become in the coming years or decades.

AI has its own set of pros and cons. But it is an unsaid fact that it has fastened the way technology serves us and satisfies our desires for the time being. Even if we only consider the food sector, this technology has achieved a milestone in kick starting the process of automation, adaptation, and autonomy. Gone are the days when humans had to stay around to keep an eye on the machines.

Thanks to AI, machines can monitor themselves and other machines too which has drastically changed the nature of workload on us.

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Training Programs

Plant BioSecurity Division

CAPACITY BUILDING PROGRAMMES:

S. No.	Name of The Programme	Duration	Date	
			From	To
	Plant Biosecurity Division (PBD)			
1.	Fruitfly Surveillance and Management	5 Days	10.04.2023	14.04.2023
2.	Forced Hot Air Treatment- **Payment Programme**	5 Days	17.04.2023	21.04.2023
3.	Plant Quarantine Procedures for Export and Import	5 Days	08.05.2023	12.05.2023
4.	Fruit fly Surveillance and Management	5 Days	22.05.2023	26.05.2023
5.	Orientation for phytosanitary certificate issuing authorities	5 Days	29.05.2023	02.06,2023
6.	Pest Risk Analysis	5 Days	05.06.2023	09.06.2023
7.	Fumigation as Phytosanitary Treatment (MBr and ALP)-**Payment Programme**	15 Days	12.06.2023	26.06.2023
8.	Training program on Warehouse Management and Scientific Storage for In- charge/ Managers/ Supervisors/ representatives of warehouseman of the PACS- **Customized Programmes with WDRA**	5 Days	26.06.2023	30.06.2023
9.	Quarantine regulations for export and import of Agricultural commodity	1 Day	22.06.2023	22.06.2023
PBD- Farmers Programme				
10.	Area wide management of fruit flies in Mango orchard	1 Day	03.05.2023	03.05.2023
	Customized Programmes for farmers with WDRA			

1.	Farmers Awareness Programme on WDRA and eNWR	1 Day	31.05.2023	31.05.2023
2.	Farmers Awareness Programme on WDRA and eNWR	1 Day	05.06.2023	05.06.2023
3.	Farmers Awareness Programme on WDRA and eNWR	1 Day	09.06.2023	09.06.2023
4.	Farmers Awareness Programme on WDRA and eNWR	1 Day	15.06.2023	15.06.2023
5.	Farmers Awareness Programme on WDRA and eNWR	1 Day	22.06.2023	22.06.2023
Vertebrate Pest Management (VPM)				
6.	Certificate course on Urban Integrated Pest Management- **Payment Programme**	15 Days	25.04.2023	09.05.2023
7.	Rodent Pest Management	5 Days	08.05.2023	12.05.2023
8.	Level 1 Training on "Urban Pest Management for Technicians	2 Days	15.05.2023	16.05.2023
9.	Online Training on "vertebrate pest management - wild boar, monkey and birds	3 Days	06.06.2023	08.06.2023
VPM Farmers Programmes				
10.	Rodent Pest Management for farmers	1 Day	30.05.2023	30.05.2023

DETAILS OF TRAINING PROGRAMMES (Govt. Officials & Private sector)

- **Forced Hot Air Treatment –**Payment Programme: NIPHM is the only Institute in India to offer a specialized training programme on Forced Hot Air Treatment (FHAT) for industry stakeholders. In this regard, a program of 5- Days was conducted from 17th-21st April 2023 at NIPHM, Hyderabad. The participants were learnt the critical requirements for establishing FHAT facilities, calibration of sensors, placement of sensors, identification of coolest point, safety precautions, conducting the treatments, use of appropriate mark, audit protocols and record keeping in accordance with ISPM – 15 and NSPM – 9. The programme was attended by 70 participants from different states across the country.

- **Fruit fly Surveillance and Management:** Two, five-day programmes were conducted from 10th– 14th April 2023 and 22nd– 26th May 2023. In this training programme the participants have learnt about fruit fly biology, classification, fruit fly identification, exotic fruit flies, their paths of entry and fruit fly surveillance. The participants got acquainted with the strategies to promote export of fresh produce by employing postharvest management measures including phytosanitary treatment and pest free area concept. Practical sessions included preparation of low-cost bottle trap and Methyl Eugenol & Cue lure, establishment of traps in the field and collection and identification of fruit flies.

- **Plant Quarantine Procedures for Export and Import:** Realizing the importance of Plant Biosecurity and Plant Quarantine which acts as basis for export promotion and safe import, NIPHM organized the training from 8th -12th, May 2023**.** In this program, sixteen officials from five states viz., Andhra Pradesh, Telangana, Gujarat, Tamil Nadu

and Maharashtra got trained in the areas of International Regulation *w.r.t.* plant health, National regulations, export and import procedures *w.r.t.* Agricultural and Horticultural commodities and export promotion.

- **Certificate course on Urban Integrated Pest Management:** The programme was organized for the structural pest management professionals from 25.04.2023 to 09.05.2023. Total 27 participants were attended the course from various states. The topics covered are Ecology and ethology of rodents, mosquitos, termites, cockroaches, bedbug and flies etc. and their management practices. In addition to that topic such as safe and judicious use of pesticides, Care, handling and maintenance of pesticide application equipment, Food safety & standards in food processing industries and urban weed management, Start-up in Pest control, etc. were also coved.

- **Rodent Pest Management -** Training to Agricultural Extension officers and scientists of SAUs, ICAR from 08th-11th May 2023. Total 17 officers (AOs/ ADAs/ Scientists) from SAUs of various states were trained on different aspects, such as major rodent pests in agri. and horti. cultural ecosystem, and their management. Apart from that biology and morphology of rodents, breeding profile of rodents, rodent borne diseases, non-chemical and chemical management of rodent pest etc. were also taught to the participants.

- **Level 1 Training on "Urban Pest Management for Technicians -** National Institute of Plant Health Management organised an off-campus training programme on Urban Pest Management for the Technician (Level 1) at KVK, Puducherry from 15th - 16th May 2023. The programme was organised with Pest Management Associations on payment basis and total 25 pest control technicians were attended the training programme. The participants were trained in various aspects such as biology and management of mosquitos, cockroaches, rodent, bedbug and termites. In addition to the participants were leant about the Insecticide Act, 1968 and safe handling of pesticides and spraying techniques. The pre and post course examination was conducted to all the participants. Further the participants were taken to conduct the field practical on termite treatment in preconstructions buildings in nearby areas.

- **Orientation for Phytosanitary Certificate Issuing Authorities:** 5 days programme from 29th May to 02nd June 2023 was conducted at NIPHM and attended by 7 participants from different states and departments. Phytosanitary certification is one of the basic measures employed by the IPPC member countries to prevent global movement of plant pests in traded agricultural commodities. Phytosanitary certificates are issued by the exporting NPPO as a plant health certificate after carrying out inspection, sampling, testing and treatment (if required) to promote safe trade. The participants got acquainted on international regulations and obligations under IPPC to promote safe agricultural trade, the role and responsibilities of NPPO and PSC issuing authorities. They also learnt the procedures for use of on-line PQMS software skills for inspection & sampling, testing for pests of concern to importing countries, importing country's regulations.

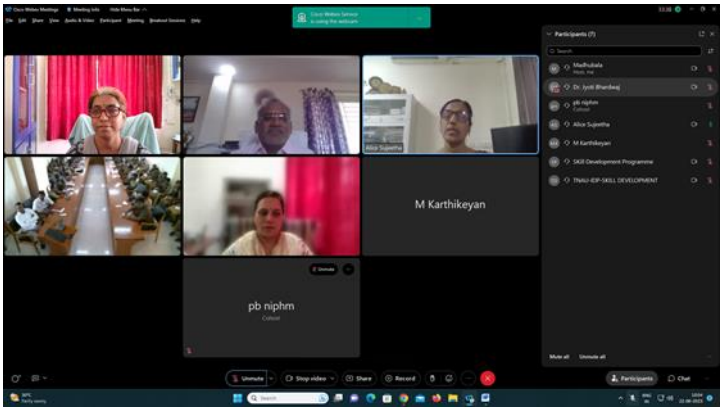
- **Pest Risk Analysis:** PRA is used to assess the risks of entry, establishment and spread of exotic pests. PRA helps to identify the options to prevent the entry and management options in the event of pest establishment. The international standards brought out by IPPC serve as guidance for carrying out PRA. During the programme participants have learnt the importance of international conventions & National regulations, SPS obligations for regulating trade based on pest risk analysis, concept of risk and risk analysis, PRA process for assessing the likelihood of pests being associated with the pathway, transport, its direct and indirect impact in the event of pest establishment, spread and the risk management options to minimize such event to happen. The participants have also got acquainted with the importance of PRA for market access for new commodities in the international trade through mock exercises. Total 10 officers from Karnataka, Maharashtra, Madhya Pradesh and Telangana were attended the programme.


Plant Quarantine Station visit

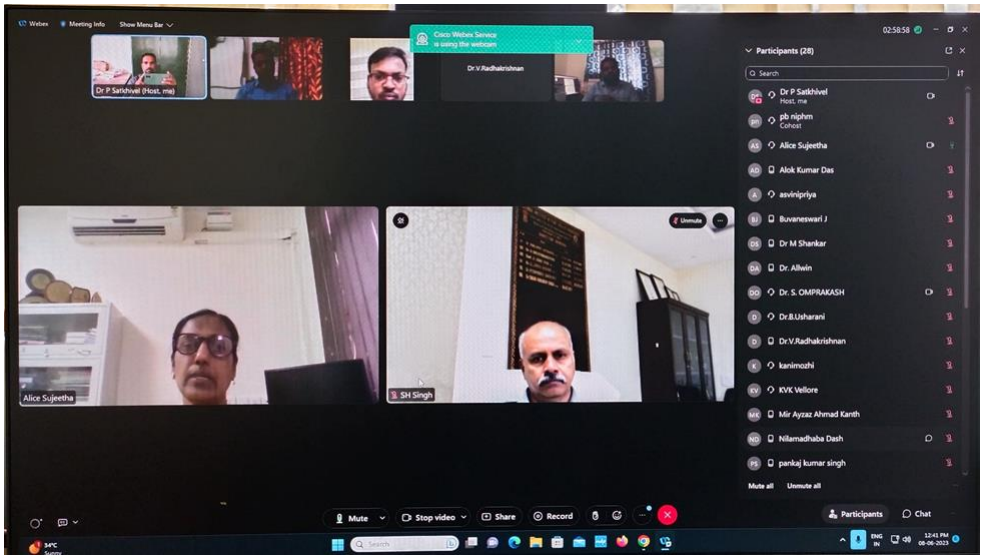
Group Photo

- **Fumigation as Phytosanitary Treatment (MBr and ALP):** A 15-day payment programme was conducted from 12th to 26th June, 2023 and programme was attended by 16 participants from different states. NIPHM is one of the notified Institutes under Insecticides Rules 1971 Chapter III -10, (3a) (iii) for imparting training for commercial pest control operators on fumigation using Methyl bromide and Phosphine. The participants learnt the use of approved fumigants, their physical and chemical properties, safety precautions to be followed while handling fumigants, modes of action of fumigants, principles of fumigation, monitoring the fumigant concentration, appropriate use and maintenance of fumigants and safety equipment. The participants get exposure to understand 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 PPQ&S.

- **Quarantine regulations for export and import of Agricultural commodity:** NIPHM organized an online training "Quarantine regulations for export and import of Agricultural commodity" on 22nd June 2023. Fifty students and 5 faculties of Agricultural College and Research Institute, Vazhavachanur, Tamil Nadu attended the programme. The topics covered were International regulatory framework, plant quarantine system in India export and import procedures.



- **Online Training on "vertebrate pest management - wild boar, monkey and birds:** NIPHM is the premier Institute in India to offer specialized capacity building programs such as training in Vertebrate & Urban Pest Management. National Institute of Plant Health Management organised a 3-day online training on vertebrate pest management - wild boar, monkey and birds" from 06th- 8th June 2023. Total 35 scientists/ agriculture officers from different states (Andhra Pradesh, Telangana, Kashmir, Odisha, Bihar and Tamil Nadu) were attended the training. The topics were covered were as- Major vertebrate pests – Economic importance of vertebrate pests in agriculture and horticulture, Indian Wildlife Protection Act, 1972, Biology of Wild boar and their management in Agri. Crops, Management of Elephant in agri. crops, Management of Nilgai in agri crops, Biology of Monkey and their management in agri. / horti ecosystem, Predatory birds in agriculture and Horticulture, Integrated bird pest management in agri and horti. crops. The valedictory programme was graced by the Director General and Director (PB).



Farmer Programme:

- **Area wide management of fruit flies in Mango Orchard:** Plant Biosecurity Division, NIPHM conducted farmers training program on Fruit fly Management in Mango at Khetireddypally, Shadnagar, Rangareddy District on 03.05.2023. Faculty from NIPHM was deputed to conduct the training program. A total 24 farmers attended the training program. Faculty of NIPHM given live demonstration of bottle trap and lure preparation and demonstrate the placement of traps, trap density and availability of lures at NIPHM, Hyderabad. NIPHM also provided the telugu language pamphlets to the farmers for on-farm production of traps and lures.

- **WDRA trainings at KVK -Madanapuram, KVK- Jammikunta, CWC- Jangaon, KVK -Jammikunta and KVK- Gaddipally:** Total five 1-day programmes were conducted on 31.05.2023, 05.06.2023,09.06.2023,15.06.2023 and 22.06.2023.

  One day Farmers Awareness Programme on WDRA and eNWR on 22.06.23 at KVK, Gaddipally for farmers of Suryapet district. 51 farmers attended the training. Mr. Arunkumar from NERL also attended and trained the farmers along with scientists of KVK, Gaddipally. The farmers were taken to WDRA registered godown at Nerudacherla (TSWC- Owned godown).

గిడ్డంగుల్లో ధాన్యం నిల్వకు జాగ్రత్తలు పాటించాలి

• జాతీయ మొక్కల ఆరోగ్య నిర్వహణ సంస్థ ఏడీ మరియాదాస్

గండేపల్లి, జూన్ 22 : గిడ్డంగుల్లో ధాన్యం నిల్వకు తగు జాగ్రత్తలు తీసుకోవాలని జాతీయ మొక్కల ఆరోగ్య నిర్వహణ సంస్థ (ఎన్‌బీపీహెచ్‌ఎం) అసిస్టెంట్ డైరెక్టర్ ఎ.మరియాదాస్ సూచించారు. మండలంలోని గడ్డిపల్లి కేవీకేలో వేర్ హౌజ్ డెవలప్‌మెంట్ రెగ్యూలేటరీ అథారిటీ (డబ్ల్యూడీఆర్‌ఏ), నెగోషియబుల్ వేర్ హౌస్(ఎన్‌డబ్ల్యూఆర్)పై రైతులు, వ్యాపారులు, పప్పు మిల్లుల యజమానులకు గురువారం నిర్వహించిన ఒక రోజు అవగాహన కార్యక్రమంలో పాల్గొని మాట్లాడారు. నెగోషియబుల్ వేర్‌హౌస్‌తో రైతులు ఎలా లబ్ధి పొందవచ్చనే విషయాలు వివరించారు. అదేవిధంగా పొలంలో ఎలుకల యాజమాన్యంపై అవగాహన కల్పించారు. తగు జాగ్రత్తలు పాటించకపోతే ఎలుకలతో 10- 30శాతం వరకు నష్టం వాటిల్లుతుందన్నారు. అదేవిధంగా ధాన్యం నిల్వపై ప్రతి ఒక్కరూ అవగాహన కలిగి ఉండాలన్నారు. అనంతరం ఎన్‌ఈఆర్‌ఎల్ తెలంగాణ, ఆంధ్రప్రదేశ్ రీజనల్ మేనేజర్ అరుణ్‌కుమార్ మాట్లాడుతూ ఎన్‌డబ్ల్యూఆర్ రిసిప్ట్ తీసుకునే విధానం, దాంతో ధాన్యం నిల్వ చేసుకోవడమే గాక, నిల్వ చేసిన ధాన్యానికి లోన్ తీసుకునే అవకాశం రైతులకు ఉంటుందని వివరించారు. అనంతరం నేరేడుచర్లలోని స్టేట్ వేర్ హౌజింగ్ కార్పొరేషన్‌కు తీసుకెళ్లి ధాన్యం నిల్వ గురించి ప్రత్యక్షంగా చూపుతూ వివరించారు. కార్యక్రమంలో కేవీకే ఇన్‌చార్జి పీసీ లవకుమార్, శాస్త్రవేత్తలు డి.ఆదర్శ్, డి.నరేశ్, ఎ.కిరణ్, ఎన్.సుగంధ, టి.మాధురి, 50మంది రైతులు పాల్గొన్నారు.

శిక్షణ కార్యక్రమంలో మాట్లాడుతున్న మరియాదాస్

బీడుపీడల నివారణపై అవగాహన ఉండాలి

గిడ్డంగులలో ధాన్యం నిల్వ పద్ధతులపై శిక్షణ

ధాన్యం నిల్వపై ఒక రోజు శిక్షణలో మాట్లాడుతున్న జాతీయ మొక్కల ఆరోగ్య నిర్వహణ సంస్థ ఏడీ మరియాదాస్

గిడ్డంగులలో ధాన్యం నిల్వ జాగ్రత్తలపై అవగాహణ

8 | శుక్రవారం • సూర్యాపేట టైమ్స్ | 23-06-2023 | WWW.SURYAPETTIMES.COM | సూర్యాపేట టైమ్స్

గిడ్డంగులలో ధాన్యం నిల్వ చేసే సమయంలో జాగ్రత్తల గురించి కేవికేలో శిక్షణ

One day Farmers Awareness Programme on WDRA and eNWR on 15.06.23 at KVK, Jammikunta for FPO farmers of Huzurabad and Jammikunta, Karimnagar district. 50 farmers attended the training. Mr. Srinivas, Manager, Canara Bank, Huzurabad also attended and trained the farmers along with scientists of KVK, Jammikunta. The farmers were taken to WDRA registered godown at Jammikunta.

సాక్షి

గోదాములను సద్వినియోగం చేసుకోవాలి

మాట్లాడుతున్న మరియాదాస్

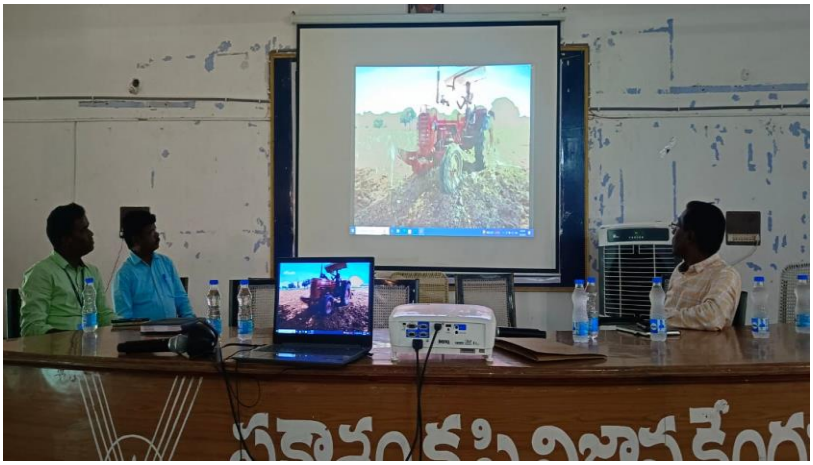
జమ్మికుంట: రైతులు, వ్యాపారులు వ్యవసాయ ఉత్పత్తులను గోదాముల్లో నిల్వ చేసుకునే వెసులుబాటును సద్వినియోగం చేసుకోవాలని జాతీయ మొక్కల ఆరోగ్య నిర్వహణ సంస్థ (ఎన్‌పీహెచ్‌ఎం) డాక్టర్ మరియాదాస్ అన్నారు. గురువారం పట్టణంలోని కేవీకేలో రైతులు,వ్యాపారులు, మిల్లు యాజమానులకు అవగాహన కల్పించారు. పంట ధరలు పెరిగే టప్పుడు గోదాములో నిల్వచేసుకొని ఎక్కువ ఆదాయం పొందవచ్చని సూచించారు. నిల్వ సమయంలో బ్యాంక్ నుంచి రుణాలు పొందవచ్చని తెలిపారు. ప్రగతి రైతు సంఘం రైతుల కోసం ఎఫ్‌పీవో ద్వారా గోదామును ఏర్పాటు చేయాలని కోరారు. కేవీకే ప్రధాన కార్యదర్శి పరిపాటి విజయ్‌గోపాల్‌రెడ్డి, సీనియర్ శాస్త్రవేత్త ఎన్. వెంకటేశ్వర్‌రావు, రైతులు పాల్గొన్నారు.

Date: 16/06/2023, Edition: Karimnagar(Karimnagar District), Page: 8
Source : https://epaper.sakshi.com/

కేవికే లో రైతులకు, వ్యాపారులకు గిడ్డంగుల పై అవగాహన

మాభూమి – జమ్మికుంట: జమ్మికుంట లోని కృషీ విజ్ఞాన కేంద్రంలో గిడ్డంగుల పై రైతులకు, వ్యాపారులకు, పప్పు మిల్లుల యజమానులకు అవగాహన నిర్వహించారు. ఈ కార్యక్రమంలో జాతీయ మొక్కల ఆరోగ్య నిర్వహణ సంస్థ డా. మరియదాస్ ముఖ్య అతిథిగా పాల్గొని పండించిన పంటను తక్కువ ధరకే అమ్ముకోవడం కాకుండా మార్కెట్ లో ధర నిర్ణయాన్ని బట్టి ఎక్కువ పలికిన రోజు అమ్ముకోవడానికి అనువుగా గిడ్డంగులలో నిల్వ చేయడం వల్ల ఎక్కువ ఆదాయాన్ని పొందవచ్చు సూచించారు.బ్యాంక్ నుండి రుణం కూడా పొందవచ్చని, రైతులకే ముందుగా గిడ్డంగిని కేటాయిస్తారని చెప్పారు.తదుపరి డా.ఎన్.వెంకటేశ్వర్ రావు మాట్లాడుతూ జమ్మికుంట రైతు ప్రగతి , మానకొండూర్ రైతు ప్రగతి రైతు సంఘం రైతులని ఉద్దేశించి %FPO% ద్వారా గిడ్డంగిని ప్రారంభించాలని రైతులచే రైతులకి ఉపయోగపడేలా కార్యాచరణ రూపొందాలని తెలిపారు. కేవికే ప్రధాన కార్యదర్శి పరిపాటి విజయ్ గోపాల్ రెడ్డి మాట్లాడుతు రైతులు వివిధ మిల్లర్ వాళ్ల ఈ గిడ్డంగుల పై ప్రభుత్వం కల్పిస్తున్న రాయితీని వినియోగించి కోతకి వచ్చిన పంటను గిట్టు బాటు ధర రానప్పుడు అమ్ముకోవడం కాకుండా గిడ్డంగిని వినియోగించు కోవాలని చెప్పారు. ఈ కార్యక్రమములో కేవికే శాస్త్రవేత్తలు,రైతులు,వ్యాపారులు, తదితరులు పాల్గొన్నారు.

One day Farmers Awareness Programme on WDRA and eNWR on 05.06.23 at KVK, Jammikunta for farmers & FPO farmers of Karimnagar district. 50 farmers attended the training.



సాక్షి

పంట ఉత్పత్తుల నిల్వపై అవగాహన

జమ్మికుంట: పట్టణంలోని కేవీకేలో వేర్ హౌజింగ్ డెవలప్‌మెంట్ రెగ్యులేటర్ యాక్టు, నెగోషియేబుల్ వేర్ హౌజ్ రిసిప్ట్ ఆధ్వర్యంలో పంట ఉత్పత్తుల నిల్వపై రైతులు, వ్యాపారులు, మిల్లర్లకు సోమవారం అవగాహన కార్యక్రమం నిర్వహించారు. ఈ సందర్భంగా ఎన్ఐపీహెచ్ఎం(నేషనల్ ఇన్‌స్టిట్యూట్ ఆఫ్ ప్లాంట్ మేనేజ్‌మెంట్) డైరెక్టర్ డాక్టర్ మరియదాస్, కెనారా బ్యాంక్ మేనేజర్ శ్రీనివాస్, కేవీకే సీనియర్ శాస్త్రవేత్త వెంకటేశ్వర్ రావులు మాట్లాడారు. రైతులు పండించిన పంట ఉత్పత్తులను తక్కువ ధరలకు అమ్ముకోవద్దని చెప్పారు. ధాన్యం పాడకుండా ఉండేందుకు తీసుకోవాల్సిన చర్యలను వివరించారు. గోదాముల్లో నిల్వ చేసుకున్న ధాన్యం, పప్పు దినుసులపై ఏవిధంగా బ్యాంకు ఋణం పొందవచ్చో తెలిపారు. కార్యక్రమంలో కేవీకే శాస్త్రవేత్తలు విజయ్, వేణుగోపాల్, శ్రీనివాస్‌రెడ్డి తదితరులు పాల్గొన్నారు.

రమేష్, ACO - 7997958214

Date: 06/06/2023, Edition: Karimnagar(Huzurabad), Page: 11
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- **Training on "Rodent Pest Management for farmers":** National Institute of Plant Health Management organised an off-campus training programme on Rodent Pest Management for farmers at Kanha Shanti Vanam Ashram, Kanha Village, Nandigama Mandal, Rangareddy District, Telangana. Ashram is located on the outskirts of Hyderabad, Telangana. Kanha Shanti Vanam is the world headquarters of the Heartfulness Institute. The campus which is spread over 400 acres. They campus have serious rodent problem in various zones. In order to contain the rodent problem in non-chemically in the campus one day training on rodent pest management was organised on 30.05.23 where in twelve (12 Nos) farmers were trained on rodents and their management through application of burrow smoker. Further the participants were taken to conduct the field practical on rodent management with help burrow smokers in the campus



FORTHCOMING PROGRAMMES OF PBD & VPM

Division	Name of the programme	No. of Days	From	To
PBD	Forced Hot Air Treatment (FHAT)	5 Days	10.07.2023	14.07.2023
	Online digital tools in Plant Protection and Plant Quarantine	3 Days	21.08.2023	23.08.2023
	Detection and Identification of Quarantine Pests (Insects, Pathogens, Weeds and Nematodes)	21 Days	29.08.2023	18.09.2023
	Awareness Program on Pest Free Area	2 Days	05.09.2023	06.09.2023
	Plant Bio Security & Incursion Management (PBIM)	5 Days	25.09.2023	29.09.2023
VPM	Non-Insect Pest Management – Mites, crabs, snails, slugs and avian	3 Days	04.07.23	06.07.23
	Eco-friendly approaches for management of vertebrate pests in agriculture and horticultural ecosystem	5 Days	17.07.2023	21.07.2023
	Rodent Pest Management	5 Days	11.09.2023	15.09.2023
	Certificate Course on Urban Integrated Pest Management	51 Days	16.08.23	30.08.23

Plant Health Management Division

CAPACITY BUILDING PROGRAMMES:

S No	Name of the programs	No. of Days	From	To
I.	**Officers programme**			
➢	On-farm Production of Bio-inputs"	10	12.04.2023	21.04.2023
➢	orientation Training Program on 'Plant Health Management' for Newly Recruited Officials of DPPQ&S was conducted from	30 days	20.04.2023	19.05.2023
➢	Field Diagnosis and Management of Plant Parasitic Nematodes" from	5 days	08.05.2023	12.05.2023
➢	Good Agricultural Practices' was organized by NIPHM from	5 days	15.05.2023	19.05.2023
➢	'*Organic and natural farming practices*' was organized by NIPHM from	(5 days).	22.05.2023	26.05.2023
➢	Production Protocol for Bio-fertilizers and Bio-pesticides*"* was organized by NIPHM from	5 days	29.05.2023	02.06.2023
➢	'Plant Health Management in Protected Cultivation' was organized at NIPHM from	5 days	05.06.2023	09.06.2023
➢	Safe and Judicious use Glyphosate' by PCOs'	01	14.06.2023	-
➢	Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-II'	01	16.06.2023	-
➢	Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-III'	01	21.06.23	-
➢	Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-IV'	01	23.06.23	-
➢	On farm Production of Biocontrol Agents and Microbial Biopesticides" under Assam Agribusiness and Rural Transformation Project (APART) of IRRI	03	20.06.2023 to 23.06.2023	-
➢	Integrated soil Nutrient & Rhizosphere Management' was organized at NIPHM from	5 days	19.06.2023 to	23.06.2023
II.	**Farmers training programme**			
➢	Training cum Demonstration of bioinputs in FCV tobacco	2 days	03.04.2023 &	04.04.2023
➢	On-farm production of biocontrol agents has been conducted under collaboration with Andhra Pradesh MahilaAbivrudhi Society (APMAS) from	3 days	19.04.2023 to	21.04.2023

- **On-farm Production of Bio-inputs**

  As per the approved training calendar, NIPHM organized an on campus training program on **"On-farm Production of Bio-inputs"** (12.04.2023 to 21.04.2023 (10 days) In this program, a total of 19 officers from different SAUs, KVKs and agricultural and allied departments of Bihar, Uttar Pradesh, Andhra Pradesh, Chattisgarh, Haryana, Kerala, Himachal Pradesh states have been participated.




- **Orientation training program on 'Plant Health Management' for newly recruited officials of DPPQ&S (III Batch)**

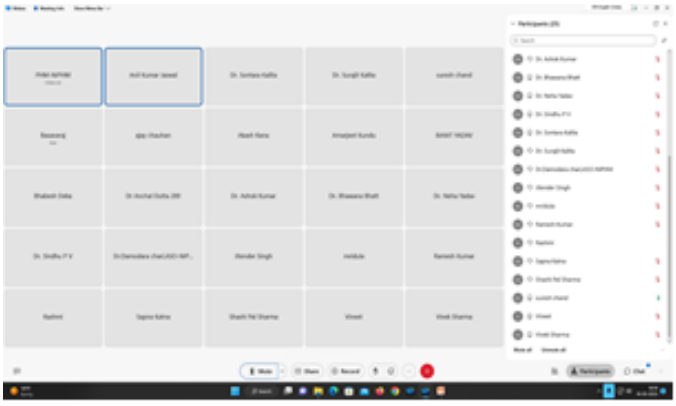
Third batch of orientation Training Program on 'Plant Health Management' for Newly Recruited Officials of DPPQ&S was conducted from 20.04.2023 to 19.05.2023 (30 days). In this training programme a total of 37 participants from DPPQ&S working at various (Central Integrated Pest Management Centres (CIPMC), Plant Quarantine Station (PQS), Central Insecticide Board and Registration Committee (CIB&RC), Locust Control and Research attended the training program.


- **Field Diagnosis and Management of Plant Parasitic Nematodes**

  As per the approved training calendar, NIPHM has organized a training programme on "Field Diagnosis and Management of Plant Parasitic Nematodes" from 08.05.2023 to 12.05.2023 (5 days) In this program, a total of 12 officials from different states have participated. The participants have undergone different sessions such as Current Status of Plant Parasitic Nematode Problems in India, Nematode Management through Bio-pesticides, Sampling and Extraction of plant parasitic nematodes, Integrated Nematode Management in Vegetables grown in poly houses, Plant parasitic nematodes of quarantine importance in India. Field and polyhouse visit at NIPHM for infestation, On Farm Mass Production of Trichoderma, Pseudomonas, *Pacelomyces lilacinus* for the biological control of nematodes, Plant parasitic nematodes in orchard crops and their management. Handling of Plant parasitic and Entomopathogenic nematodes, Diagnosis of Plant parasitic nematodes in Horticultural crops. Practical sessions were also conducted. Participants have expresses satisfaction about the programme in their feedback and some of the participants have shown interest to work in collaboration with NIPHM in future. This programme will be more useful for the trained personnels to create an awareness about nematode problems and their management for the farming community.

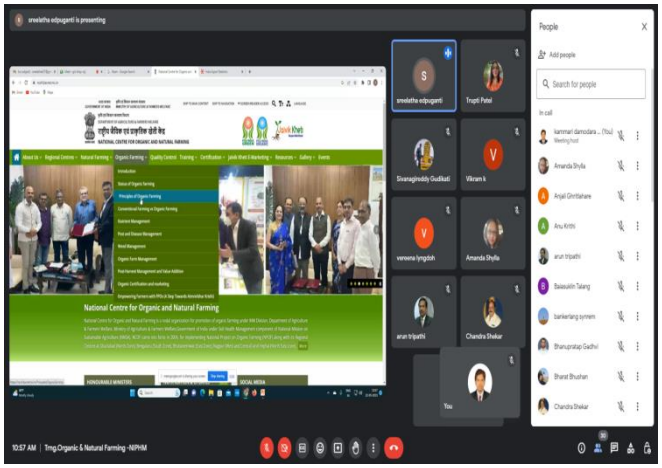
- **Online training program on Good Agricultural Practices**

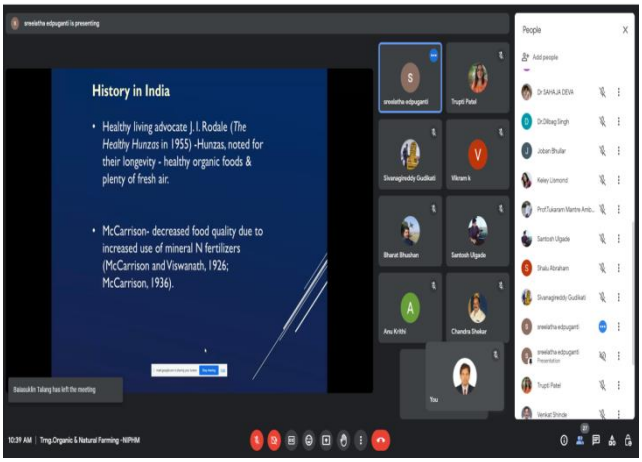
An online training programme on 'Good Agricultural Practices' was organized by NIPHM from 15.05.2023 to 19.05.2023 (5 days). In this programme total of 24 officers/ scientists/ field level officers from different states & organizations have been participated. This training is helpful to the participants to get knowledge on aspects of Good Agricultural Practices.

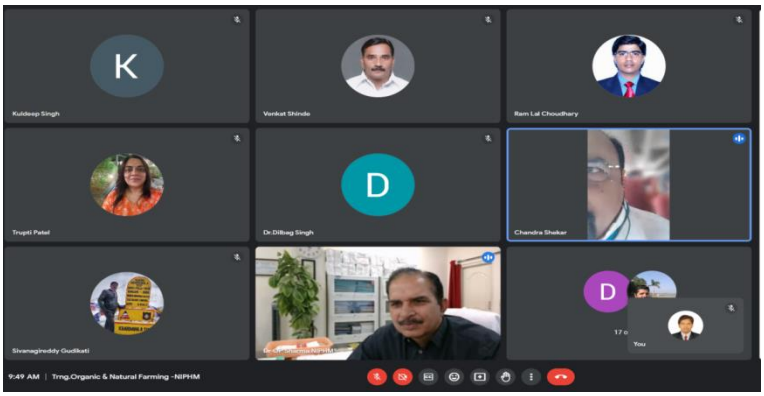


- **Training on organic and natural farming practices**

An online training programme on '*Organic and natural farming practices'* was organized by NIPHM from 22.05.2023 to 26.05.2023 (5 days). In this programme total of 35 officers/ scientists/ field level officers from different states & organizations have been participated. This training is helpful to the participants to knowledge on aspects of organic and natural farming practices.







- **Production Protocol for Bio-fertilizers and Bio-pesticides**

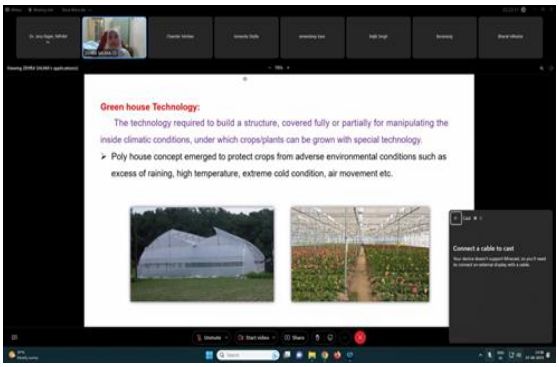
A special training programme on "Production Protocol for Bio-fertilizers and Bio-pesticides*"* was organized by NIPHM from 29.05.2023 to 02.06.2023 (5 days). In this programme total of 20 staff of rural industrial park, Dantewada, Chhattisgarh have been participated. On-farm production of bio-fertilizers, mass production of entomopathogenic fungi and NPV, quality control of bio-fertilizers, quality control of bio-pesticides were covered with hands on practice. During this training, a visit also made to bio-fertilizer lab, PJTSAU and showcased facility of carrier-based bio-fertilizer production.

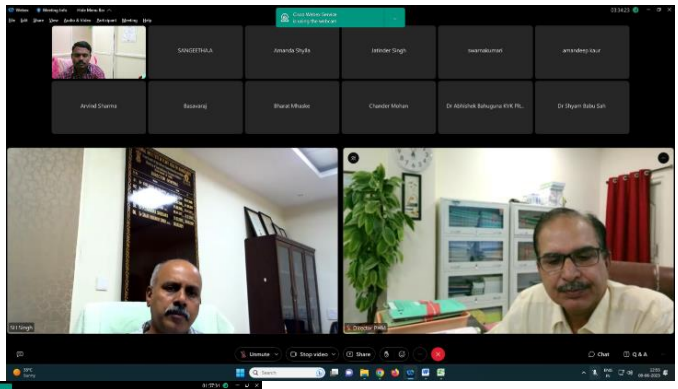


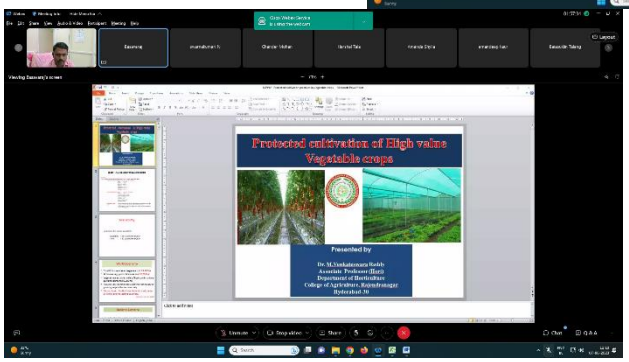



- **Plant Health Management in Protected Cultivation Program**

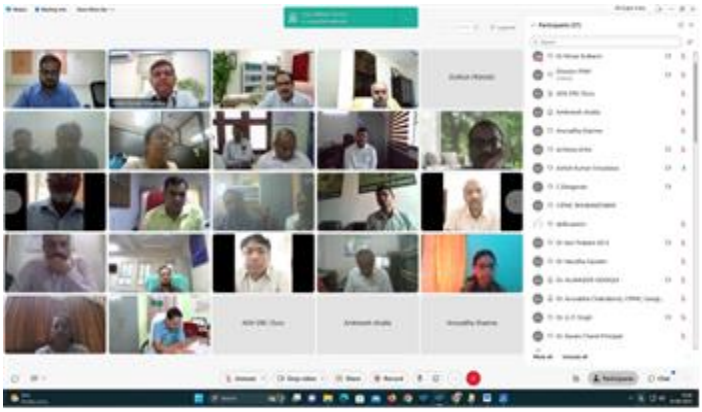
As scheduled in the NIPHM training calendar 2023-24, an online training programme on 'Plant Health Management in Protected Cultivation' was organized at NIPHM from 05th to 09th June 2023 (5 days). In this programme total of 39 officers/scientists from SAUs, KVKs and Agriculture and allied departments of different states have participated.

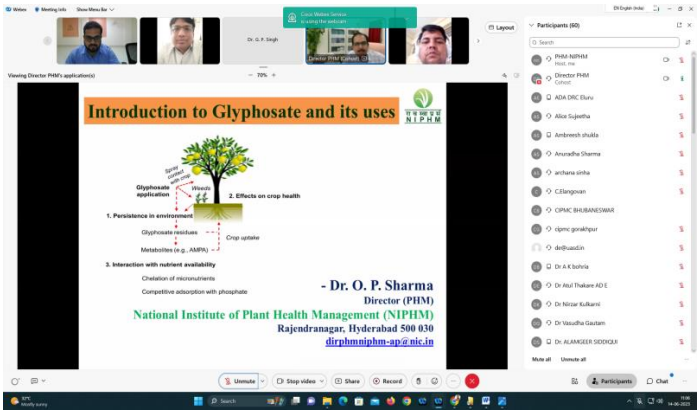


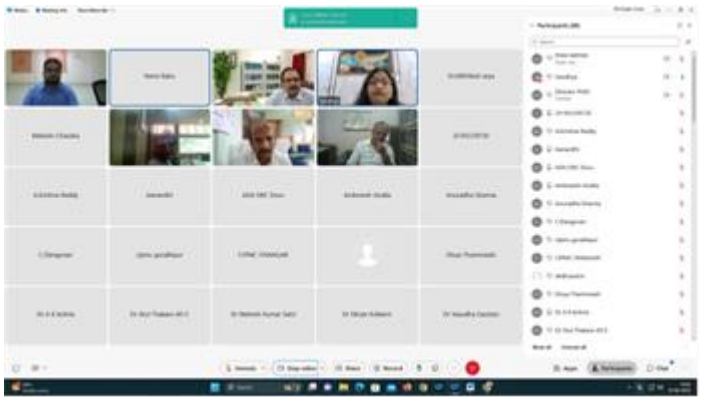


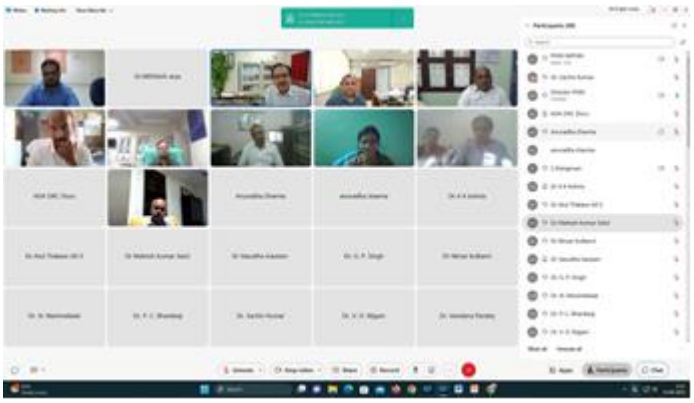


- **Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-I' held on 14.06.23**
  First batch of training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs' was held on 14.06.23 (1 day online). In this training programme total of 44 participants from SAMETIs of Andhra Pradesh, Uttar Pradesh, Karnataka, Jharkhand, Haryana, Puducherry and DPPQ&S officials working in various CIPMCs and RCIPMs of the country were attended.



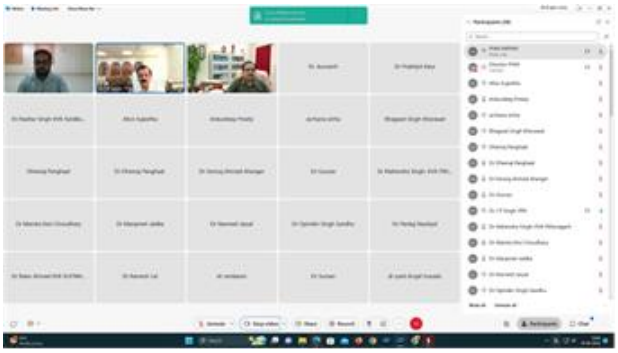


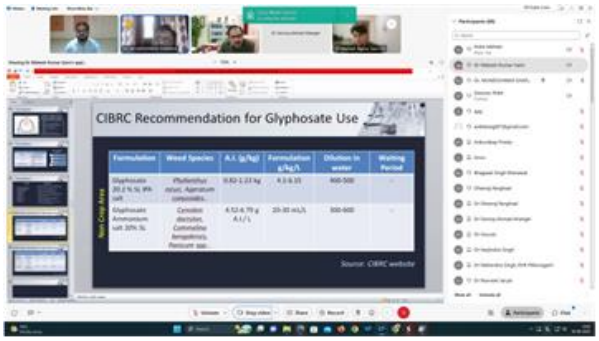


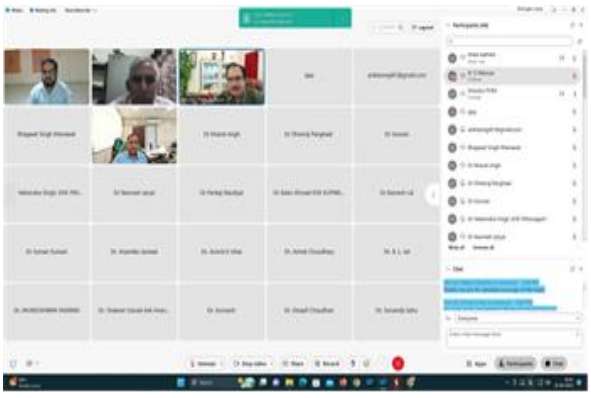


- **Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-II' held on 16.06.23**

Second batch of training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs' was held on 16.06.23 (1 day online). In this training programme total of 75 participants from KVKs of ATARI Zone I (Ludhiana) comprising of Punjab, Himachal Pradesh, Jammu & Kashmir, Ladakh, Uttarakhand and ATARI Zone II (Jodhpur) comprising of Rajasthan, Haryana, Delhi were attended.

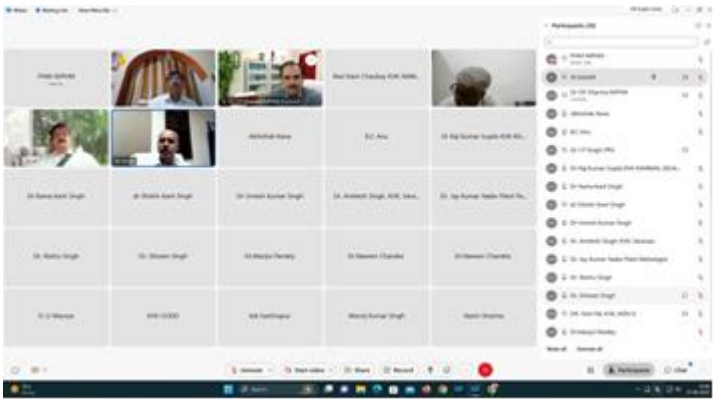


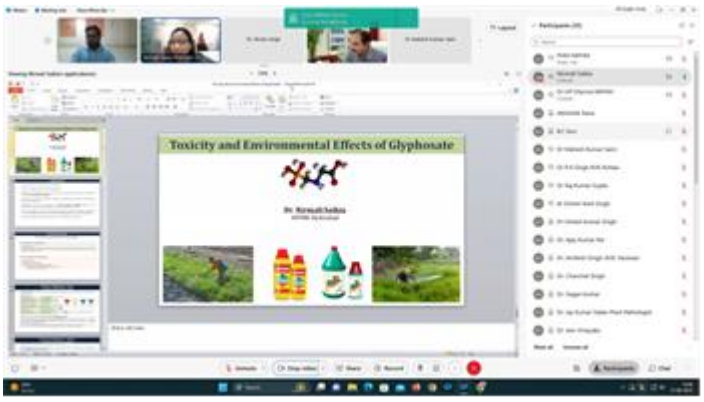


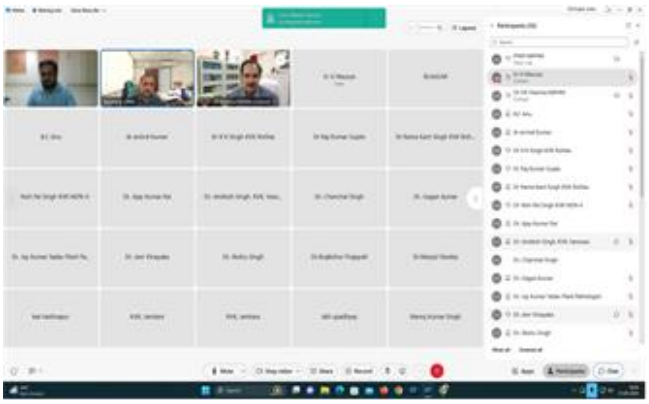


- **Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-III' held on 21.06.23**

Third batch of training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs' was held on 21.06.23 (1 day online). In this training programme total of 39 participants from KVKs of ATARI Zone III (Kanpur) comprising of Uttar Pradesh and ATARI Zone IV (Patna) comprising of Bihar, Jharkhand were attended.

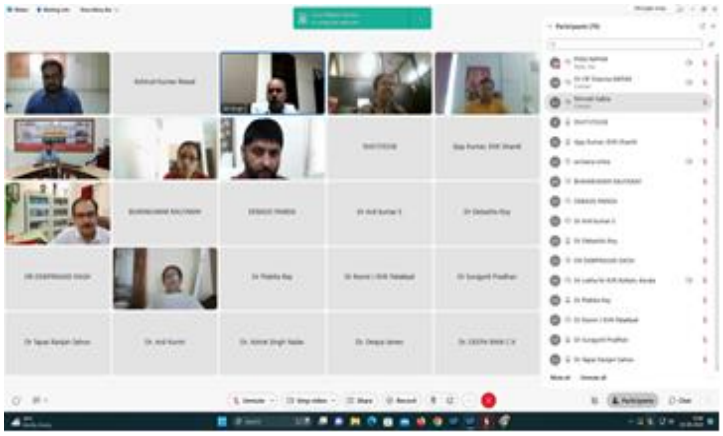


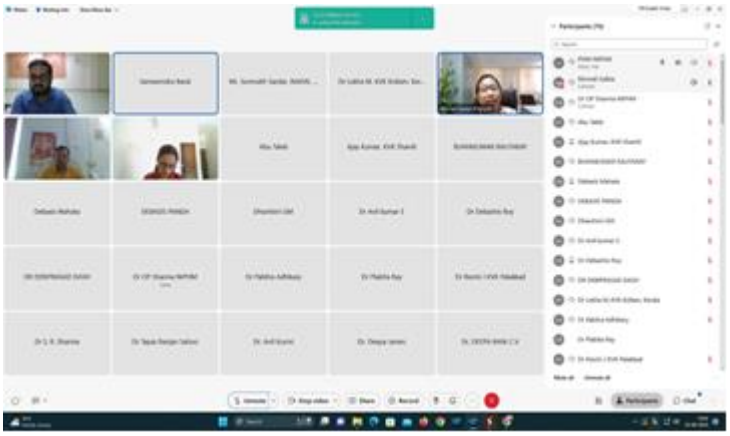


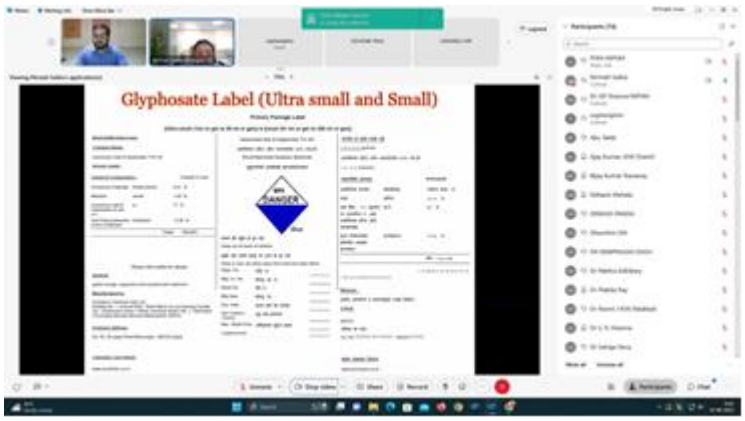


- **Training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs Batch-IV' held on 23.06.23**

  Fourth batch of training of the Master Trainers for 'Safe and Judicious use Glyphosate' by PCOs' was held on 23.06.23 (1 day online). In this training programme total of 84 participants from KVKs of ATARI Zone V (Kolkata) comprising of West Bengal, Odisha, ATARI Zone IX (Jabalpur) comprising of Madhya Pradesh, Chhattisgarh and ATARI Zone XI (Bengaluru) comprising of Karnaraka, Kerala were attended.







- **Training of Trainers (TOT) from Assam on "On farm Production of Biocontrol Agents and Microbial Biopesticides"**

  An on campus Training of Trainers (TOT) from Assam on "On farm Production of Biocontrol Agents and Microbial Biopesticides" under Assam Agribusiness and Rural Transformation Project (APART) of IRRI which is funded by world bank was conducted from 20th to 23rd June 2023(4 days). In this training program total of 19 officers from APART project Assam working at various KVK's and 3 officers from IRRI were participated. Among them 19 officers 9 members are the Board of Directors of Farmer Producer Companies (FPC) and 10 are from KVKs of Assam State.

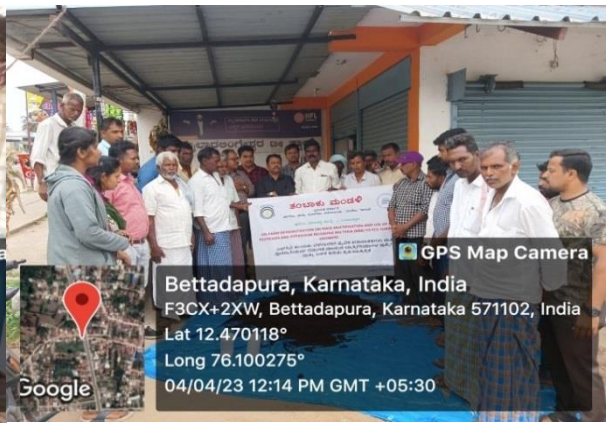
- **Integrated soil Nutrient & Rhizosphere Management**

A training programme on 'Integrated soil Nutrient & Rhizosphere Management' was organized at NIPHM from 19.06.2023 to 23.06.2023 (5 days). Rhizosphere Engineering: strategies for enhancing microbial population in soil, soil health promotion policy and issues, soil fertility in organic farming and natural farming systems: challenges and perspectives, bio-fertilizer application methods, compost enrichment, advances in soil fertility management. Further, trainees were exposed to institute of soil health management and integrated farming system unit, PJTSAU, Rajendranagar, and Hyderabad.




- **Training cum Demonstration of bioinputs in FCV tobacco**

Ad requested by Tobacco Board, NIPHM faculty visited different villages of Mysuru &Periyapatna regions of Tobacco Board and conducted two training cum demonstration at FCV growers' fields on 03.04.2023 & 04.04.2023 (2 days). In both programs, a total of 200 FCV tobacco growers/farmers from different villages have participated and got benefitted by the training cum demonstrations.


ತಂಬಾಕಿನಲ್ಲಿ ಪೊಟ್ಯಾಷ್ ಕುರಿತಾಗಿ ಪ್ರಾತ್ಯಕ್ಷಿಕೆ

ರಾಮನಾಥಪುರ, ಏ.೧೪: ಈಚಿಗೆ ತಂಬಾಕಿನಲ್ಲಿ ಪೊಟ್ಯಾಷ್, ಸಲ್ಫೇಟ್‌ಆಫ್ ಪೊಟಾಷ್ ಮತ್ತು ಟ್ರೈಕೋಡರ್ಮಾ ಬ್ಯಾಕ್ಟೀರಿಯಾಗಳನ್ನು ಕೊಟ್ಟಿಗೆ ಗೊಬ್ಬರ ಮತ್ತು ಕೋಳಿ ಪಿಟ್‌ಸೊಯಿಗೆ ಸೇರಿಸಿ ಪುಷ್ಠೀಕರಣಗೊಳಿಸುವ ಕುರಿತು ಪ್ರಾತ್ಯಕ್ಷಿಕೆಯನ್ನು ತಂಬಾಕು ಮಂಡಳಿ ರಾಮನಾಥಪುರ ಹಾಗೂ ರಾಷ್ಟ್ರೀಯ ಸಸ್ಯ ಆರೋಗ್ಯ ನಿರ್ವಹಣಾ ಸಂಸ್ಥೆ ಹೈದರಾಬಾದ್ ಸಹಯೋಗದೊಂದಿಗೆ ಇಂದು ಹಂಪಾಪುರ ಗ್ರಾಮದಲ್ಲಿ ಹಮ್ಮಿಕೊಳ್ಳಲಾಗಿತ್ತು.

ಸದರಿ ಪ್ರಾತ್ಯಕ್ಷಿಕೆಯಲ್ಲಿ ಎನ್.ಐ.ಪಿ.ಎಚ್.ಎಂ.ನ ವಿಜ್ಞಾನಿ ತಪ್ಪಾರಾದ ಶ್ರೀಯುತ ಬಸವರಾಜು ವಿಜ್ಞಾನಿಗಳು ತಂಬಾಕು ಬೆಳೆಗಾರರಿಗೆ ಮಾಹಿತಿ ನೀಡಿ, ಸಾರಜನಕ, ರಂಜಕ ಕಡಿಮೆಯಾಗುತ್ತದೆ ಹಾಗೂ ಗುಣಮಟ್ಟದ ತಂಬಾಕು ಉತ್ಪಾದನೆಯಲ್ಲಿ ಪೊಟ್ಯಾಷ್ ಅತಿ ಮುಖ್ಯವಾದ ಪೋಷಣಾಂಶವಾಗಿದ್ದು, ಎಲೆಯ ಬಣ್ಣ, ಗುಣಮಟ್ಟ, ದೇಹರಚನೆ, ಸ್ಥಿತಿಸ್ಥಾಪಕತ್ವ ಮತ್ತು ಎಲೆ ಸುಡುವ ಗುಣವನ್ನು (ಬರ್ನಿಂಗ್ ಕ್ವಾಲಿಟಿ) ಪೊಟ್ಯಾಷ್ ಅಂಶದ ಮೇಲೆಯೇ ನಿರ್ಧಾರವಾಗುತ್ತದೆ. ಆದ್ದರಿಂದ ಪೊಟ್ಯಾಷ್ ಪೋಷಣಾಂಶದ ನಿರ್ವಹಣೆ ಬಹಳ ಮುಖ್ಯವಾಗಿದೆ ಎಂದು ತಿಳಿಸಿದರು.

ಈ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಎನ್.ಐ.ಪಿ.ಎಚ್.ಎಂ.ನ ವಿಜ್ಞಾನಿಗಳಾದ ಡಾ.ಜೋದರ ಚಾರಿದವರು, ತಂಬಾಕು ಮಂಡಳಿಯ ಪ್ರಾದೇಶಿಕ ವ್ಯವಸ್ಥಾಪಕರಾದ ಶ್ರೀಯುತ ಕಂಪಲಿಂಗೇಗೌಡ, ರಾಮನಾಥಪುರದ ತರಾಬು ಅಧೀಕ್ಷಕರಾದ ಟಿ. ಬಾಷ್ ಸ್ವಾಮಿ ಮತ್ತು ಇತರ ಮಂಡಳಿಯ ತಾಂತ್ರಿಕ ಸಿಬ್ಬಂದಿಗಳು ಹಾಜರಿದ್ದರು.

ರಾಸಾಯನಿಕ ಗೊಬ್ಬರಗಳ ಮೂಲಕ ಭೂಮಿಗೆ ನೀಡಲಾಗುವ ಪೊಟ್ಯಾಷ್ ಸಾಮಾನ್ಯವಾಗಿ ಕೆಲವೇ ದಿನಗಳಲ್ಲಿ ಮಣ್ಣಿನಲ್ಲಿ ವಿವಿಧ ಅಲಭ್ಯ ರೂಪಗಳಾಗಿ ಪರಿವರ್ತನೆಗೊಳ್ಳುತ್ತದೆ. ಮಣ್ಣಿನಲ್ಲಿ ಅಲಭ್ಯವಾಗಿರುವ ಪೊಟ್ಯಾಷ್ ಅನ್ನು ಪೊಟ್ಯಾಷಿಯಂ ಜೈವಿಕ ಗೊಬ್ಬರದಲ್ಲಿನ ಸೂಕ್ಷ್ಮ ಜೀವಿಗಳು ಸಸ್ಯಗಳಿಗೆ ಲಭ್ಯವಾಗುವಂತೆ ಮಾಡಲಾಗುತ್ತದೆ ಹಾಗೂ ಗುಣಮಟ್ಟದ ತಂಬಾಕು ಉತ್ಪಾದನೆಯಲ್ಲಿ ಪೊಟ್ಯಾಷ್ ಅತಿ ಮುಖ್ಯವಾದ ಪೋಷಣಾಂಶವಾಗಿದೆ ಎಂದು ತಿಳಿಸಿದರು.

ಪ್ರಾತ್ಯಕ್ಷಿಕೆಯನ್ನು ನಡೆಸುತ್ತಾ ಬೆಳೆಗಾರರಿಗೆ ಟ್ರೈಗಳನ್ನು ತಯಾರಿಸುವ ಮೊದಲು ಕೋಳಿ ಪಿಟ್ ಅನ್ನು ಜೈವಿಕ ಗೊಬ್ಬರಗಳಿಂದಿಗೆ ಸಂಸ್ಕರಿಸಿ ಮತ್ತು ಕ್ಯಾಪ್‌ಸ್ಯಾಕ್ ಸ್ಪ್ರೇಯರ್ ಬಳಸಿ ಮುಖ್ಯ ಜಮೀನಿನಲ್ಲಿ ತೇದಾಗೊಳಿಸುವುದರ ಮೂಲಕ ಜೈವಿಕ ಗೊಬ್ಬರವನ್ನು ಅಸ್ಪಯಿಸಬಹುದು ಎಂದು ತಿಳಿಸಿದರು.

ಶ್ರೀಯುತ ಬಸವರಾಜು ಎಚ್.ಪಿ ಕ್ಷೇತ್ರಾಧಿಕಾರಿ ತಂಬಾಕು ಮಂಡಳಿ ಬೆಳೆಗಾರರಿಗೆ ಮಾಹಿತಿ ನೀಡಿ, ಗುಣಮಟ್ಟದ ತಂಬಾಕು ಉತ್ಪಾದನೆಯಲ್ಲಿ ಪೊಟ್ಯಾಷ್ ಅತಿ ಮುಖ್ಯವಾದ ಪೋಷಣಾಂಶವಾಗಿದ್ದು, ಎಲೆಯ ಬಣ್ಣ, ಗುಣಮಟ್ಟ, ದೇಹರಚನೆ, ಸ್ಥಿತಿಸ್ಥಾಪಕತ್ವ ಮತ್ತು ಎಲೆ ಸುಡುವ ಗುಣವನ್ನು (ಬರ್ನಿಂಗ್ ಕ್ವಾಲಿಟಿ) ಪೊಟ್ಯಾಷ್ ಅಂಶದ ಮೇಲೆಯೇ ನಿರ್ಧಾರವಾಗುತ್ತದೆ. ಆದ್ದರಿಂದ ಪೊಟ್ಯಾಷ್ ಪೋಷಣಾಂಶದ ನಿರ್ವಹಣೆ ಬಹಳ ಮುಖ್ಯವಾಗಿದೆ ಎಂದು ತಿಳಿಸಿದರು.

ಈ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಎನ್.ಐ.ಪಿ.ಎಚ್.ಎಂ.ನ ವಿಜ್ಞಾನಿಗಳಾದ ಡಾ.ಜೋದರ ಚಾರಿದವರು, ತಂಬಾಕು ಮಂಡಳಿಯ ಪ್ರಾದೇಶಿಕ ವ್ಯವಸ್ಥಾಪಕರಾದ ಶ್ರೀಯುತ ಕಂಪಲಿಂಗೇಗೌಡ, ರಾಮನಾಥಪುರದ ತರಾಬು ಅಧೀಕ್ಷಕರಾದ ಟಿ. ಬಾಷ್ ಸ್ವಾಮಿ ಮತ್ತು ಇತರ ಮಂಡಳಿಯ ತಾಂತ್ರಿಕ ಸಿಬ್ಬಂದಿಗಳು ಹಾಜರಿದ್ದರು.

- **On-farm production of biocontrol agents**

A farmers training on ***On-farm production of biocontrol agents*** has been conducted under collaboration with Andhra Pradesh Mahila Abivrudhi Society (APMAS) from 19.04.2023 to 21.04.2023 (3 days) at NIPHM, Hyderabad.In this programme total of 30 farmers producer Organization (FPO) members from different district of Andhra Pradesh and Telangana have participated. This hand on training programme on low-cost production methodologies of bioinputs and biocontrol agents is helpful to the farmers for enhancing their knowledge and skill on pest management under natural and organic farming. During this training programme, practical sessions on Agro Ecosystem Analysis (AESA) and ecological engineering in pest management and field visit/chart preparation, on-farm production of biofertilizers, biopesticides (*Trichoderma*, *Pseudomonas*, *EPF*, *NPV* etc.), mass production of predators and parasitoids, rodent pest management, preparation and usage of fruit fly lures, role of natural farming preparations in pest and disease management, are conducted.




Forthcoming training programmes

S No	Name of the programs	No. of Days	From	To
	Officers programme			
1.	Quarantine Nematodes of Economic Importance	03	26.06.2023	28.06.2023
2.	Training programe on IPM and INM in FCV tobacco to field staff	01	19.07.2023	--
3.	Orientation training program on 'Plant Health Management' for newly recruited officials of DPPQ&S (IV Batch)	30	15.06.2023	14.07.2023
4.	Production Protocol for Bio control agents (predators, parasitoids, microbial bio pesticides & bio fertilizers)	21	05.07.2023	25.07.2023
5.	On-line training on Plant Health Management Strategies for Climate Change	03	16.08.2023	18.08.2023
6.	Training to Pest Monitors on Field Diagnosis for IPM under CROPSAP (Maharashtra)	05	21.08.2023	25.08.2023

7.	Plant Health Management Practices in Organic Farming	03	20.09.2023	22.09.2023
8.	Training on Production Protocol for Natural Enemies of Insect Pests	05	11.09.2023	15.09.2023
III.	Farmers training programme			
➢	On farm production of bio control agents	03	16.08.2023	18.08.2023

Pesticide Management Division

CAPACITY BUILDING PROGRAMMES:

- **Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP**):
  A training programme on **"Inspection, Sampling & Prosecution Procedures under Insecticide Act 1968**" was conducted from 10th to 12th April 2023 (Online Mode). A total of 35 Officials/Insecticide Inspectors were participated from State Agriculture Department of Andhra Pradesh, Gujarat, Punjab, Chhattisgarh, Uttarakhand, Tamil Nadu and Jammu & Kashmir (UT). The Participants were trained on Insecticide Registration and licensing Procedure, Inspection and sampling of pesticide formulation under **Insecticide Act 1968 and Insecticide Rule 1971.**

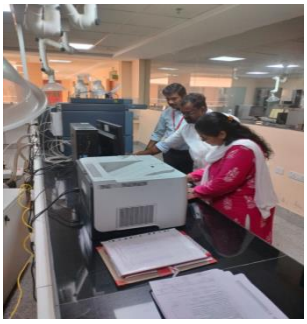
- **Role of PT and ILC in Quality Assurance and maintaining accreditation as per the ISO/IEC 17025: 2017**
  PMD conducted 1-day online training programme on **"Role of PT and ILC in Quality Assurance and maintaining accreditation as per the ISO/IEC 17025:2017** on 17.05.2023. A total of 52 officials were participated. The participants were from State Agriculture Department of Andhra Pradesh, Gujarat, Punjab, Chhattisgarh, Uttarakhand, Tamil Nadu and Jammu & Kashmir (UT). The Participants were trained on significance of the Quality Assurance, Proficiency Testing and Inter-Laboratory Comparison (ILC) for maintaining the accreditation of ISO/IEC ISO 17025: 2017.

- **Laboratory Quality Management and Internal Audit as per the ISO/IEC17025:2017:**
  The division has conducted 5 days training programme on **"Laboratory Quality Management System and Internal Audit as per ISO/IEC** 17025:2017" from 19th to 23rd June 2023. A total of 20 Officer/Analyst from State Agriculture Department of Andhra Pradesh, Gujarat, Tamil Nadu, and Karnataka were attended the programme. The officials/Analysts were trained on general requirement for the competence of testing and calibration laboratories in accordance with **ISO/IEC 17025:2017.** The trainees were also trained on procedure for Internal Audit and maintenance of accreditation of testing laboratories in accordance with **ISO/IEC 17025:2017.**

Laboratory Quality Management system & Internal Audit as per the ISO/IEC17025:2017

- **Basic Training on Pesticide Residue Analysis:**

The division has conducted 5 days programme on **"Pesticide Residue Analysis" from 19th to 23rd June 2023 on payment basis**. A total of 4 Analyst from private laboratory and ICAR institute were attended the programme. The trainees were trained on multiresidue analysis in fruits, vegetables, cereals and pulses by using GC-MS/MS and LC-MS/MS.



Pesticide Residue Analysis

Forthcoming Training Programmes:

Sl. No.	Title of the Programme	Duration (days)	From	To	Eligibility Criteria
1.	Inspection, Sampling and prosecution Procedures under Insecticide Act, 1968 (ISPP)	4	04.07.2023	07.07.2023	Agricultural / Horticultural Officer (or equivalent position) working in State Department (or) designated Insecticide Inspector (Central/State)
2.	Sampling of Fruits, Vegetables and other items for Pesticide Residue Analysis	2	10.07.2023	11.07.2023	Analysts/Scientists working in Govt. Labs / Universities
3.	Sampling of Fruits, Vegetables and other items and Calibration of laboratory equipment for Pesticide Residue Analysis	5	10.07.2023	14.07.2023	Analysts/Scientists working in Govt. Labs / Universities

4.	Pesticide Formulation Analysis	60	18.07.2023	15.09-2023	Analysts working at SPTLs/ RPTLs/ CIL
5.	Inspection, Sampling and Prosecution Procedures under Insecticide Act, 1968 (ISPP)	4	08-08-2023	11-08-2023	Agricultural / Horticultural Officer (or equivalent position) working in State Department (or) designated Insecticide Inspector (Central/State)
6.	Laboratory Quality Management System and Internal Audit as per ISO/IEC 17025:2017	5	04-09-2023	08-09-2023	Analysts working in Government Laboratories
7.	Testing of Physiochemical properties of Pesticide formulations	5	11-09-2023	15-09-2023	Analysts working at SPTLs/ RPTLs/ CIL

Plant Health Engineering Division

CAPACITY BUILDING PROGRAMMES:

- **Basic Remote Pilot Certification**

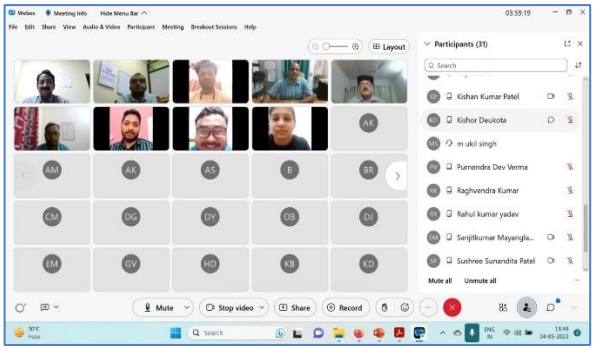
This training is part of the Drone Academy who trains and certifies the Drone Pilots for use of drones in various applications. The academy has been certified as RPTO (Remote Pilot Training Organization) in association with an Industry partner (M/s Marut Drones). Total 5 candidates (4 male and 1 female) attended the 5-day programme, conducted during 3rd to 7th April 2023. 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 2 days of on-field flying classes also were conducted in dual as well as solo mode.

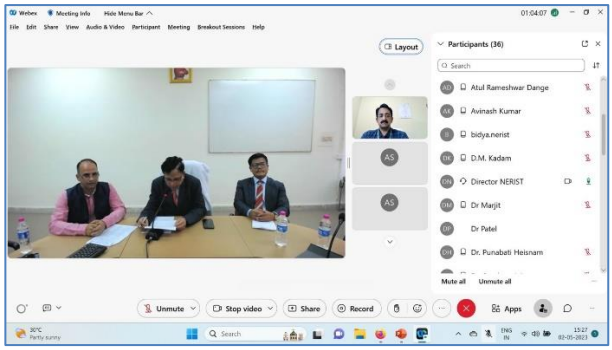
- **Agricultural Drone Remote Pilot Certification**

NIPHM started conducting agricultural chemical spraying training through drones. One batch of trainees was conducted in association with M/s Syngenta Foundation. Total 6 candidates, (6 male) attended the 7-day programme, conducted during 24th April to 30th April 2023. In addition to general aviation topics like International civil aviation organization, RPAS with in ICAO frame work, Classification of drones, Drone operation zones, ATC procedure and radio telephony and flight radio telephony, etc., Agricultural Standard Operating procedures during chemical spraying, Crop specific SOPs, Nozzles and their functionality, Dos and Don'ts in chemical spraying, safety, care and maintenance of drones and agri sparing system etc. also were dealt in detail. Lab assembly of drones and simulation experiments of drones also were conducted. Exclusive three days of flying also were arranged for the trainees.

➢ Farm equipment for Plant Health Management

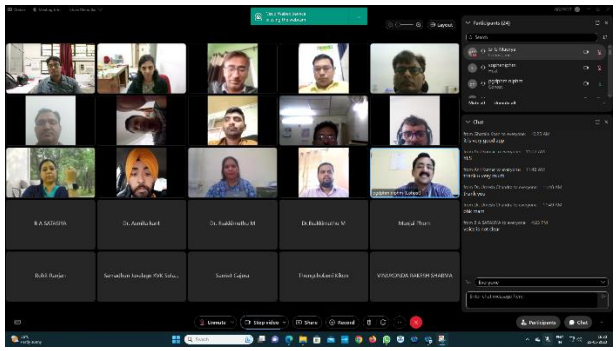
A 3 day virtual training programme on Farm equipment for Plant Health Management was organized from 2nd to 4th May 2023 in collaboration with Regional Coordinating Institute, Unnat Bharat Abhiyan, NERIST, Nirjuli, Arunachal Pradesh. Total 41 participants from different states attended the training programme. The participants were enriched with status of farm mechanization in India, equipment and practices for land preparation, transplanting, plant protection equipment, weeders and dusters, innovations in plant protection equipment, use of drones in agriculture, Digital tools for plant health, plant protection and enhancing productivity. Good appreciation received towards the conduction of the programme.

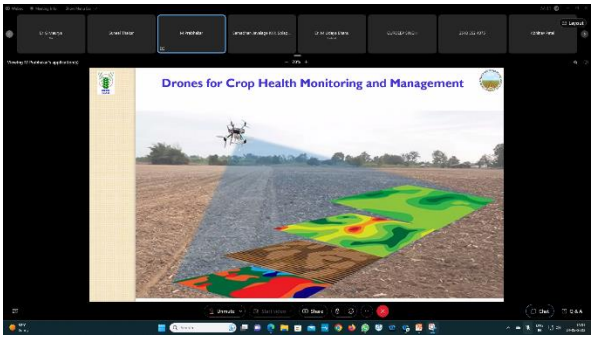


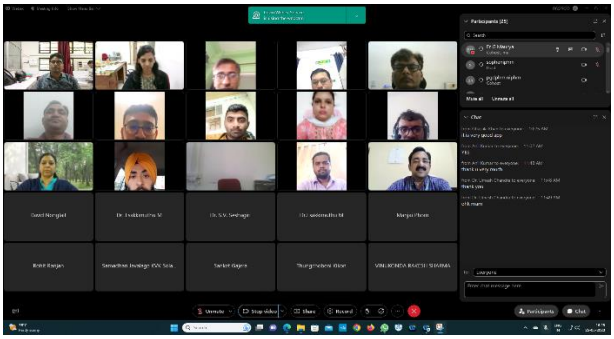


➢ Remote Sensing and GIS applications in Plant Health Management

A 3 day virtual training program on "Remote Sensing and GIS applications in Plant Health Management" was organized from 23rd to 25th May 2023. 25 participants from different states participated in the training program. The participants were enriched with basic principle of remote sensing, basic concepts of GIS, applications of RS & GIS in agriculture, different open source and commercial software available, and GPS applications. Two experts were invited to enhance participant's knowledge on RS & GIS applications in disease/ pest management and Artificial Intelligence for crop production through Plantix. Based on the participants request, demonstration of GPS and open-source software QGIS were virtually taken up.







- **Agricultural Drone Remote Pilot Certification:**

NIPHM started conducting agricultural chemical spraying training through drones. One batch of trainees was conducted in association with M/s Syngenta Foundation. Total 6 candidates, (5 male and 1 female) attended the 7-day programme, conducted during 8th to 16th May 2023. In addition to general aviation topics like International civil aviation organization, RPAS with in ICAO frame work, Classification of drones, Drone operation zones, ATC procedure and radio telephony and flight radio telephony, etc., Agricultural Standard Operating procedures during chemical spraying, Crop specific SOPs, Nozzles and their functionality, Dos and Don'ts in chemical spraying, safety, care and maintenance of drones and agri sparing system etc. also were dealt in detail. Lab assembly of drones and simulation experiments of drones also were conducted. Exclusive three days of flying also were arranged for the trainees.




- **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). Total 4 candidates (3 male and 1 female) attended the 5-day programme, conducted during 22nd to 26th May 2023. 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 2 days of on-field flying classes also were conducted in dual as well as solo mode.


- **Agricultural Drone Remote Pilot Certification:**

NIPHM started conducting agricultural chemical spraying training through drones. Two training programmes on agricultural drone pilot certification conducted, trainings were conducted in association with M/s Syngenta Foundation. Training conducted from 14th to 22nd June 2023 and total 12 male candidates attended the 7-day programme. Second programme from 21st to 29th June 2023, and 6 male participants attended the 7-day programme. In addition to general aviation topics like International civil aviation organization, RPAS with in ICAO frame work, Classification of drones, Drone operation zones, ATC procedure and radio telephony and flight radio telephony, etc., Agricultural Standard Operating procedures during chemical spraying, Crop specific SOPs, Nozzles and their functionality, Dos and Don'ts in chemical spraying, safety, care and maintenance of drones and agri sparing system etc. also were dealt in detail. Lab assembly of drones and simulation experiments of drones also were conducted. Exclusive three days of flying also were arranged for the trainees.




Forthcoming training programmes

S.No	Title of the Programme	Division	From	To	Eligibility criteria	Course Coordinator & e-mail
1.	Irrigation systems and advancements	**PHE**	**11.07.2023**	**13.07.2023**	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs	Er. Govind Maurya Assistant Scientific Officer (PHE) asopheniphm1-ap@nic.in
2.	Digital Agriculture	**PHE**	**24.07.2023**	**26.07.2023**	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs	Sk. Liyakhat Ali Ahamed, Assistant Director (ICT) adict-niphmhyd@gov.in
3.	Pesticide application techniques and safety measures	**PHE**	**21.08.2023**	**25.08.2023**	Extension officers from State Dept. of Agri./ Horti., soil survey, soil conservation, Watershed Project, Scientists of ICAR/ SAUs, etc. working on GIS	Er. M. UdayaBhanu Scientific Officer (PHE) sopheniphm2-ap@nic.in
4.	Post-harvest management and storage techniques	**PHE**	**11.09.2023**	**15.09.2023**	Extension officers from State Agriculture and Horticulture departments, Scientists of ICAR, SAUs and officials from KVKs, DPPQs. NGOs	Er. Haneefa Begum Assistant Scientific Officer (PHE) asopheniphm2-ap@nic.in
5.	Post -harvest management	**PHE**	10.08.2023	10.08.2023	Farmers	Er. Haneefa Begum Assistant Scientific officer (PHE) asopheniphm2 -ap@nic.in
6.	Refresher course on Agricultural Engineering	**PHE**	18.09.2023	29.09.2023	Graduate students with agriculture background	Dr.VidhuKampurath Joint Director (PHE) jdenggniphm-ap@nic.in

Inauguration of Integrated Biological Control Laboratory at National Institute of Plant Health Management by Union Agriculture Minister Shri Narendra Singh Tomar on 15 May 2023 at NIPHM Hyderabad.

NIPHM promotes sustainable agricultural practices such as Agroecosystem Analysis (AESA), Ecological Engineering (EE), promoting the use of different parasitoids, predators, bio-pesticides and bio-fertilizers in Agriculture. NIPHM is spreading awareness through regular capacity building programs, showcasing laboratory production technologies, giving hands-on-training & experience for officials and scientist from different states, SAUs, KVKs, ICAR institutes and Farmers. Recently, many states are promoting bio-intensive crop management practices like utilization of bio-fertilizers and bio-control agents for environmental and plant health safety. There is an increase in demand for the supply of different types of bio control agents and formulations of bio-fertilizers and bio-pesticides. Growing demand for capacity building in the emerging areas of bio-control, specifically on on-farm mass production and quality control is observed by NIPHM.

The New Integrated Bio Control Laboratory is a multi-story building situated in the NIPHM campus, comprising several laboratories dealing with Bio-pesticide, Bio-control agent (Predators and Parasitoids), Entomopathogenic fungi, Bio fertilizer, NPV inoculation, Natural Farming Cell, Nematology, Pheromone, and Botanical lab. The use of bio-control agents, bio-pesticides, and bio-fertilizers helps in reducing the use of chemical pesticides and fertilizers, which are causing adverse effects on the environment and human health. The BC Lab also have an Insect museum, weed museum and exhibition hall to showcase the specimens of insects and weeds in the best preserved or live forms. Integrated Bio control Laboratory facility is equipped with state-of-the-art equipment, and the labs are staffed with highly trained faculty, scientists & researchers.

The Integrated Bio control Laboratory also facilitates and promotes research and development in bio-control agents, bio-pesticides, and bio-fertilizers for effective plant protection and sustainable agriculture. The inauguration of this facility is a significant milestone in the development of chemical free sustainable agriculture in India. The facility will help the farmers to adopt sustainable agricultural practices and promote the use of eco-friendly alternatives to chemical pesticides and fertilizers. This facility will also help in enhancing the knowledge and skills of agriculture officers and extension officers in the field of plant protection.

Honourable Union Agriculture Minister Shri Narendra Singh Tomar Inaugurated the Integrated Biological Control Laboratory on 15.05.2023 at the National Institute of Plant Health Management (NIPHM)- Hyderabad Telangana and visited various labs and exhibition along with Sh. Manoj Ahuja, Secretary DA& FW and Dr. Pramod Kumar Meherda, Addl. Secretary (PP), Ministry of Agriculture & Farmers Welfare graced the Occasion along with other Dignitaries. \

A glimpse of New Integrated Bio control Laboratory

Union Agriculture Minister Honourable Shri Narendra Singh Tomar Inaugurated the Integrated Biological Control Laboratory on 15.05.2023

Inauguration of Integrated Biological Control Laboratory by Union Agriculture Minister Honourable Shri Narendra Singh Tomar the on 15.05.2023

Union Agriculture Minister Honourable Shri Narendra Singh Tomar visiting insect museum at Integrated Bio control Laboratory

Union Agriculture Minister Honourable Shri Narendra Singh Tomar at Exibition hall

Group photo of NIPHM faculty and other dignitories from Ministry of Agriculture and Farmers welfare with Union Agriculture Minister Honourable Shri Narendra Singh Tomar at Integrated Bio control Laboratory

- **International Day of Plant Health 2023 at NIPHM**

The United Nations (UN) has unanimously adopted 12th May as International Day of Plant Health, an issue critical in addressing global hunger as plant pests and diseases cause massive crop losses and leave millions without enough food. Plant health is vital to the sustainable development of agriculture, required to feed a growing global population by 2050. National Institute of Plant Health Management (NIPHM) was established by Government of India with the objectives of human resource development in plant protection technology, plant quarantine and bio-security with special emphasis on crop oriented Integrated Pest Management approaches. It also, trains personnel in analysis of pesticide formulations and pesticide residues for monitoring the residue levels in the agricultural produce.

National institute of Plant Health Management (NIPHM), Hyderabad celebrated the occasion of International day of Plant Health at NIPHM, on 12th May 2023. About 80 participants from NIPHM, neighbouring ICAR institutes and State Agriculture University attended the program. The programme was inaugurated by honourable Director General Dr. Sagar Hanuman Singh, IPoS and participated by staff of NIPHM. During this event, Dr.Saratth Babu, President, Plant Protection Association of India has invited as guest of honour. Dr.Saratth Babu delivered an elaborative talk on ***challenges of plant health management*** and emphasized on general public on the importance of Plant health and spread the message of protecting plant health and legal aspects of plant health protection. In the program the Director General emphasised on the importance of maintaining good plant health using available natural resources in order to have good human health as plants are the foundation of food pyramid.

Research & Development

- **AICRP on Biological Control of Crop Pests (ICAR-AICRP-BC)-NIPHM, Hyderabad (**Volunteer Centre)

Evaluation of NIPHM white media for the production of *Nomuraearileyi (Metarhiziumrileyi)* NIPHM MRF-1 strain for management of Maize Fall Army worm (*Spodopterafrugiperda*)

This project aimed for the production of *Metarhiziumrileyi* two media viz. NIPHM White media and broken rice were used. To standardize the production technology, the media under test were made into six treatments (Broken rice (without yeast extract), Broken rice (with yeast extract), 1% NIPHM white media, 2% NIPHM white media, 3% NIPHM white media, 4% NIPHM white media)and for each treatment two replications were maintained.

Project progress during this quarter: Preparation of SMAY media and Performed sub culturing of Metarhizium rileyi (EPF) on SMAY media. The work on bioassay is under progress. Contingency granted from Main centre.

- **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 270 samples (Fruits, vegetables, cereals, pulses, milk and water) from Banjara hill Hyderabad, Medchal-Malkajigiri Farm gate and Alwal market, 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 140 samples (fruit and vegetables) were received from ANGRAU and 105 water samples (extract) from CSIR-NEERI. The samples were analyzed under MPRNL scheme. The division has also received 22 tobacco samples from Tobacco Board, Guntur and the samples were analyzed.

A total of 72 botanical/bio-pesticides samples were received from Bihar, Punjab, Karnataka, and Tamil Nadu. The samples were analyzed by GC-MS/MS and LC-MS/MS.

A total of 12 pesticides formulation samples were received from National Seed Corporation (Secunderabad and Bhopal) for quality test of pesticide product. All the samples were analyzed. Moreover, a total of 8 samples were also received from Central/State Insecticide Laboratories under Interlaboratory Comparison programme.

Pesticide Formulation and Residue Analytical Center laboratory

- **Proficiency Testing Center (PTC):**

NABL accreditation as per ISO 17043: 2010

Proficiency Testing Center (PTC) was assessed on 20th and 21st May 2023 for the renewal of NABL accreditation certificate. One lead Assessor and one Technical assessor have assessed the technical and management perspective of the ISO: 17043:2010. Based on the audit, the auditors had recommended for continuation of accreditation of PTC, NIPHM as per the ISO 17043:2010.

Proficiency Testing Center (PTC) assessment (20th and 21st May 2023)

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

PTC, PMD has organized PT PRA programme on Brinjal (PTC/PR/04/22-23) for 8 compounds in the month of December 2022. The final PT-reports of Brinjal (PTC/PR/04/22-23) were sent to 28 participants.

Special Programme for Central Pollution Control Board (CPCB):

The laboratory has prepared 145 water samples for the PT-Central Pollution Control Board (PTC/CPCB/W/23-24). Homogeneity studies were carried out before dispatched of samples. The samples were dispatched to 110 CPCB Laboratories.


Water Sample preparation for the PT programme PTC/CPCB/W/23-24

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

  Final reports of PT programme which was conducted during November-December 2022 for Acetamiprid Technical (PTC/PF/04/22-23), Deltamethrin EC (PTC/PF/05/22-23) and Atrazine WP (PTC/PF/06/22-23) were sent to 54 participants (Laboratories)**.**

  PTC, PMD has organised PT PFA programme on Profenofos Technical, Thiophanate Methyl WP and Lambda Cyhalothrin EC. The samples (items) were dispatched to all the participating laboratories (57 laboratories) on 18th May, 2023 after completion of successful homogeneity studies.

Thiophanate Methyl WP L-Cyhalothrin EC formulation


Weighing & Packing of pesticides (PT items)

Faculty Achievements

- Dr. Vidhu Kampurath attended webinar on Generative AI, conducted by Wadwani foundation was attended, where Mr. Easwer from SAI group presented the possibilities of various generative models of AI in different applications including agriculture.
- All PHE faculties attended the lecture on e-SAP module by Dr. Prabhuraj from UAS, Raichur.
- Dr. Vidhu along with Dr. Girish completed the research visit to University of Stirling and Newcastle University as part of water hyacinth project.

Other Activities

- **Rodent and Household Pest Management MOOCs Certificate Course: T**e VII batch started from 1st April to 30th June 2023. The 31 participants are attending the module II.

- **MOOCs in Plant Biosecurity**: Sixteen participants are attending module II.

- **KERALA PGDPHM:** Students are engaged in their project work.

- **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

- PBD faculty attended the PMA Annual conference on Fission -2023 organized at Jaipur, Rajasthan from 14.04.20233 to 15.04.2023.
    - The Director General (NIPHM) and Director (PB) has graced the event as Chief Guest and Guest of Honour respectively. ASO (VPM) has also attended the conference. Around 120 delegates from the pest control industry have attended the training.
    - The Handbook on Urban Pest Management has been released during the event.
    - The event information and advertisement on sale of book has been posted in the NIPHM website, Face book page for wider publicity.

- **MoU signed between NIPHM and APEDA**: NIPHM and APEDA signed an MoU on 09.05.2023 in the august presence of Director General- NIPHM, Director - Plant Biosecurity, NIPHM, Registrar- NIPHM and Mr. R. P. Naidu, Regional Head, APEDA to carry out the studies on "Hot Water Immersion Treatment for Chillies" at NIPHM, Hyderabad.

- **Visit to Stirling University, UK**: Dr. Girish A G., Deputy Director (PP) visited the Sterling University under the collaborative project.

- **Farmer Advisory Cell Activities:**
  Under farmers advisory cell, faculty are interacted farmers about their queries related tp plant protection, bioinputs usage etc. Almost 250 farmers are approached NIPHM through telephonic communication.
- **NIPHM Instructional farm**
  During this quarter 2023-24, kharif season, cucurbits (ridge gourd, bottle gourd, bitter gourd), maize, paddy, brinjal, chilli was planted. Timely irrigation and weeding was done. Insect pest data collected and IPM measures were taken. Installed pheromone traps and sticky traps. Fields were monitored regularly and data on pests and natural enemies recorded.
- **Polyhouse (Protected cultivation)**
  During this quarter 2023-24, the following activities are performed under protected cultivation. Tomato crop is under cultivation. Installed pheromone traps and sticky traps. Collected and destroyed leaf eating caterpillars. Irrigation, weeding and staking was done.
- As the Coordinator for Input Dealer Course (West Bengal), five new batch of training programme were running under NIPHM – monitoring of all activities by Er. M Udaya Bhanu as nodal officer for West Bengal state.

- As the Coordinator for Input Dealer Course (Gujrath State), 9 batches of training programmes are started under NIPHM regularly monitoring the class, visits and conduction of examination activities from different NTI by Er. Sk Haneefa Begum as nodal officer for gujarat state.
- All staff attended the Environmental day celebration at the Institute and participated in the tree plantation drive.
- International Yoga Day was Celebrated at NIPHM.
- All staff attended the E-office version change and implementation meeting.

Publications/ Guest Lectures / Invited faculties / Visitors

- **Officials: (Govt./Private/NGO)**

i. The Head of Research and Credit wing from M/s Syngenta Foundation visited. In addition to the proposed drone training, other feasibilities viz., collaborating for the pesticide dealer course, spray man project etc. were discussed.

ii. Thirty participants from EEI, Rajendran Nagar visited PHE workshop and got acquainted with advance spraying techniques like drone in agriculture and electrostatic sprayer. A practical demonstration on advance sprayers has taken up.




- **Farmers / Dealers**

Trainees from various input dealers and farmers programs visited PHE workshop, and got acquainted with Sprayers, nozzles, tractor operated sprayers and other useful equipment.




Chief Editor
Dr. Sagar Hanuman Singh IPoS, DG
Executive Editor
Dr. Alice R.P. Sujeetha, Director (PBD)
Editorial Board Members
Dr. Vidhu Kampurath P, JD(PHE)
Dr. A.G. Girish, DD(PP)
Er. Shaik Liyakhat Ali Ahamed, AD(ICT)

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Director General

National Institute of Plant Health Management (NIPHM)
Department of Agriculture & Farmers Welfare,
Ministry of Agriculture & Farmers Welfare, Government of India
Rajendranagar, Hyderabad – 500 030, Telangana, India
Tele Fax. +91 40 24015346, niphm@nic.in