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भाकृअनुप-राष्ट्रीय समेकित नाशीजीव प्रबंधन अनुसंधान केन्द्र

NCIPM

ICAR-National Research Centre for Integrated Pest Management

# समाचार पत्रिका Newsletter

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## *From the Director's Desk*

**Natural enemies: their role in IPM and ways and means to boost its population**

Natural enemies are parasitoids, predators and pathogens that help to reduce crop pest population below economic threshold level. Nowadays, pest management comprising natural enemies as an important component is sought after due to rising pesticide cost, adverse effect on environment and awareness of pesticide residues by consumers. Natural enemies role in limiting the damaging pests was realized when natural enemies of potential pests were devastated by pesticides.

Insects which were minor once became damaging when they became free from their natural enemies. Natural enemies in various forms play vital role in Integrated Pest Management (IPM) which mitigates major pests of crops using all available local tools with chemical pesticides as a last resort. Success of IPM strategy largely depends on eco-friendly management tools and conservation and augmentation of natural enemies. We, at ICAR NCIPM give prominence to natural enemies as an important component of an IPM module. The most widely used natural enemies *Aphelinus mali*, *Aphytis lingnanensis* and *Rodolia cardinalis* as

inoculative releases have been introduced in several countries. As an augmentative bio- control, more than 170 species of natural enemies are reared worldwide and sold globally for the control of over 100 pests. Several indigenous natural enemies were identified against Fall Army Worm *Spodoptera frugiperda* which include egg parasitoids *Telenomus* sp. and *Trichogramma* sp., egg larval parasitoid *Chelonus* sp., gregarious larval parasitoid *Glyptapanteles creatonoti* and a solitary larval parasitoid *Campoletis chlorideae*. Predators such as earwig *Forficula* sp., predatory bugs *Andrallus spinidens* and *Eocanthecona furcellata* have also shown encouraging results. Egg parasitoids *Trichogramma chilonis*, *T. pretiosum* and *Telenomus remus* are now being widely tested and validated. In the rice

ecosystem, conservation and inundative releases of egg parasitoids *Trichogramma japonicum* and *T. chilonis* have provided promising results. Notable suppression of the hopper *Pyrilla perpusilla* was achieved by the colonization of the lepidopteran parasitoid, *Epiricania melanoleuca*. Indigenous parasitoids *Goniozus nephantidis*, *Elasmus nephantidis* and *Brachymerianosatoi* significantly reduced coconut black-headed caterpillar *Opisina arenosella* population

Significant control of cottony cushion scale, *Icerya purchasi* was obtained by coccinellid predator *Rodolia cardinalis* in the Nilgiris and upper Palni hills in

Tamil Nadu, Maharashtra, Karnataka and Kerala. Significant achievements were made in managing mealy bugs infesting fruit crops, coffee and ornamentals in south India by exotic coccinellid predator *Cryptolaemus montrouzieri*. San Jose scale *Quadraspidiotus perniciosus* affecting apple orchard was managed by the aphelinid parasitoid *Encarsia perniciosi.* Coccinellid beetle *Curinus coeruleus*, imported from Thailand established successfully in Karnataka, Kerala, Andhra Pradesh, Tamil Nadu and Manipur targeting subabulpsyllid *Heteropsylla cubana.* Exotic aphelinid *Aphelinus mali* emerged as a parasitoid in regulating apple woolly aphid *Eriosoma lanigerum* in the J&K valleys. *Encarsia guadeloupae* was responsible for significant reduction in spiraling whitefly, *Aleurodicus disperses* population which infests more than 250 plant species. Papaya mealy bug *Paracoccus marginatus,* an alien mealy bug recorded on papaya in Coimbatore in 2008 was successfully suppressed by *Acerophagus papayae, Pseudleptomastix mexicana* and *Anagyrus loecki*, the three exotic parasitoids. *Leptocybe invasa* caused damage to eucalyptus plantations in Tamil Nadu in 2004 which spread to south and north Indian states and was suppressed by exotic parasitoid *Quadrastichus mendeli* imported from Israel thereby saving Indian paper industry. Cassava mealy bug *Phenacoccus manihoti* entered India in 2020 and caused severe crop damage in Kerala and Tamil Nadu. Exotic parasitoid *Apoanagyrus lopezi* imported in 2021 is now being evaluated in different parts of the country. Significant suppression of the sugarcane woolly aphid *Ceratovacuna lanigera* was achieved by indigenous predators *Dipha aphidivora* and *Micromus igorotus* and the parasitoid *Encarsia flavoscutellum*. Maximum parasitism of invasive rugose spiraling whitefly (RSW) *Aleurodicus rugioperculatus* infesting coconut, banana, custard apple and ornamental plants was achieved by *E. guadeloupae*

Habitat manipulation often known as 'Ecological Engineering' increases biodiversity and provides resources for natural enemies. Addition of extra resources like pollen, nectar or alternate prey increases natural enemies in the field. Mixed cropping increases crop diversity and provides natural enemies with alternate food sources and refuge. Increase in landscape complexity through noncrop habitat, enhances natural enemy abundance and diversity. Cultivation of strip crops around wheat field provides floral resources for hover flies. Insect pest outbreaks are most likely in monocultures than in diversified crop conditions which has potential for pest management through habitat manipulation. Habitat manipulation such as incorporation of flowering plants has shown potential for effective pest management. Intercropping creates microclimate which encourages predator and parasitoid activities and provides refuge and nutritional sources for natural enemies. Hedgerows, shelterbelts, conservation headlands and beetle banks must be planted with perennial plants/grass to promote habitat diversity. Tiger beetles, predatory carabids, rove beetles, sphecoid wasps and spiders that make nests in the ground find protection and overwintering with increased predation. Development of bloom strips to provide nectar as nutrients for natural enemies is a good technique of ecosystem management. Strips of flowering crops such as sesame and sunflower grown on unused ridges around rice crops provide nectar to natural enemies with increased parasitism of plant hopper in rice. Addition of organic amendments such as composts, grasses and animal wastes increases predatory activity in many agro-ecosystems. Synthetic herbivore-induced plant volatiles (HIPV) have been used to increase natural enemy abundance. HIPVs are also used in push-pull strategies to repel herbivores from crop plants.

Spiders and beetles prefer hedge rows than field margins and bare ground. Field margins with hedge or trees are sources and corridors for natural enemies and play important role in increasing the diversity of predators such as beetles and spiders. Floral and extra floral nectars are important food sources that increase longevity, fecundity, predation and female ratio of natural enemies. Nectars also contain amino acids that support growth and development of natural enemies. Pollen is mainly a source of proteins and amino acids that can increase insect longevity and fecundity. Pollen and nectar are essential for parasitic wasps and hoverflies. Honeydew can be a major alternative food source for parasitoids and predators when nectar is not readily available. Plants of Apiaceae such as coriander, dill, and fennel attract parasitic wasps and flies while members of Asteraceae such as chrysanthemums, daisies, marigolds and sunflowers are favorites of ladybird beetles and soldier beetles. Legumes like broad beans, alfalfa and sweet clover attract hoverflies, pirate bugs and tachinid flies. Coriander, dill, fennel, sunflower and marigold can be grown as intercrops with other crops. Cover crops alter the microclimate suitable for natural enemy population and provide flowers that attract natural enemies by providing pollen and nectar and.

Non selective, broad-spectrum persistent insecticides such as carbamates, organophosphates and pyrethroids which kill many natural enemies and pollinators need to be avoided. Neonicotinoids and organophosphates poison bees and natural enemies that feed on nectar, pollen and liquids that plants ooze. Pesticides with least adverse effect on natural enemies and pollinators should be chosen. Likewise, need broad-spectrum herbicides which reduce the abundance of flowering plants that attract and feed pollinators and natural enemies must be avoided.

Farmer participation in habitat management is very important for developing appropriate habitat management strategies that encourage wider acceptability. Though mechanism to promote natural enemy population is explored, focused work on bottom-up effects of vegetation on pests is needed. Field of habitat management is multidisciplinary and involves agronomists, geographers, molecular biologists and ecological economists. Longer-term studies on habitat management are required as impacts of pesticides, shifts in surrounding landscape, synergistic interactions among multiple ecosystem services and global warming on natural enemies are still unclear.

# New Initiatives

## Inauguration of ICAR-NCIPM, New Building at Rajpur Khurd, New Delhi

The newly constructed Research and Administrative Building of the National Research Centre for Integrated Pest Management of the Indian Council of Agricultural Research (ICAR), New Delhi was inaugurated by the Union Minister of Agriculture & Farmer Welfare and Tribal Affairs, Hon'ble Shri Arjun Munda ji on 28$^{th}$ February, 2024. Shri Mundaji during hios inaugural address said "The centre is playing an important role in the field of Integrated Pest Management (IPM)" and dedicating the new building to the nation, would benefit the country in its efforts towards improving crop productivity and livelihood of farmers. Union Minister of State for Agriculture and Farmer Welfare, Hon'ble Shri Kailash Choudhary ji, South Delhi Member of Parliament, Hon'ble Shri Ramesh Bidhuri ji and Secretary, DARE and Director General, ICAR, Hon'ble Dr. Himanshu Pathak ji also graced the occasion and wished all success to the scientists in their endeavour towards research and upliftment of farming community. Dr. Tilak Raj Sharma, Deputy Director General (Crop Science), Dr. Subhash Chander, Director, ICAR-NCIPM, Dr. A.K. Singh, Director, IARI and Dr. D.K. Yadav, ADG (Seed) were present in the function.



## MoU signed

A MoU was signed between ICAR-NCIPM, New Delhi and Draslovka Services India Pvt Ltd (DSI), Mumbai (Maharashtra) on 30$^{th}$ May, 2024 for contract service.

## Research Activities

### Refinement and Promotion of IPM in *Basmati* and Traditional Rice

A validation trial on IPM in *basmati* and traditional rice was initiated during *kharif* 2024 in 20 ha at Etawah (village Chitbhawan, Sinhuan, Sirhaul), Uttar Pradesh in collaboration with ICAR-IARI, New Delhi and KVK Etawah, UP. Majority of the farmers in the district cultivate short duration basmati rice varieties PB1509, PB1692, PB1718 and PB1847 while a few farmers grow traditional rice variety Kala Namak.Farmer meeting was organized on 30th May, 2024 to educate farmers on pest identification and natural enemies, ETL, *Trichocard* and good agriculture practices (GAP). Farmers were also apprised about IPM interventions such as seed treatment with *Trichoderma harzianum*, seedling root dip with *Pseudomonas fluorescens,* installation of pheromone trap @5/ha for yellow stem borer (YSB) monitoring, weekly pest monitoring and need-based application of safer pesticides and judicious use of fertilizers.

### Horizontal spread of IPM in *basmati* rice in Haryana and Uttar Pradesh

Horizontal spread of IPM in *basmati* rice was continued in 1800 ha in cluster villages of Bambawar area in the Gautam Budh Nagar district, UP and 300 ha in cluster of villages in Nidana, Rohtak, Haryana. Technical support and IPM advisories were provided to the farmers through Whatsapp message and phone call with the help of trained progressive farmers.


### Validation and promotion of IPM in context of natural farming

Training cum awareness programmes were organized on 18-20 April 2024 at KVK, Sitapr-II, UP on natural farming and demonstration of Jeevamrit, Beejamrit, Ghan-Jeevamrit, Das-Parni Ark, Neemashtra, Agni-Ashtra and Brahm-Ashtra preparation. Seed treatment and soil enrichment with bijamrita and need based application of homemade concoctions *viz.*, neemastra, agniastra, brahmashtra (for borer pest), dashparni ark (sucking pest) and use of milk product (chhachh) for management of diseases were highlighted during the programme.

### Farmer participatory IPM Field Day in field pea

A farmer participatory IPM Field Day in field pea was organized on 6th Feb, 2024 in collaboration with *KVK* Jalaun (BUAT, Banda) in connection with IPM programme being executed in three villages - Nainpura, Kukargaon and Mandri covering 48 ha under the crop. During the program, emphasis on seed treatment by *Trichoderma* harzianum against soil borne diseases and its on-farm mass multiplication was demonstrated in which 45 farmers participated

## Field Day organized on IPM Mustard in Haryana and Madhya Pradesh

Two field days were organized for dissemination of IPM technology in Mustard under the project "Refinement, validation and large-scale implementation of IPM technology" in Indian Mustard at village Baslambi, Gurugram, Haryana on 7th February, 2024 and at village Beerampura, Morena, Madhya Pradesh on 6th March, 2024 by Oilseed Team of ICAR-NCIPM, New Delhi. Dr. Subhash Chander, Director ICAR-NCIPM, New Delhi discussed about IPM and present day IPM scenario in the country. Scientists associated with the project shared the view on IPM technologies in mustard including major insect pests and diseases and their management. At both the locations more than 100 farm women and farmers participated in the discussion and concerns raised by particularly on Sclerotinia stem rot and mustard aphid were duly addressed by the scientists.


## *Kisan Gosthi* on Maize IPM

ICAR-NCIPM, New Delhi and *KVK*- Udaipur (Raj.) organized *'Kisan goshthi'* on Maize IPM on 15th July 2024 at Turgarh village, Udaipur, Rajasthan in which more than 30 farmers participated. Emphasis was given to importance of Integrated Pest Management strategies to combat the challenges posed by pests and diseases in maize crop. Critical inputs such as Neem oil, *Trichoderma* asperellum and Pheromone traps were distributed that were aimed at equipping farmers with the necessary tools to enhance crop yield and ensure sustainability

## Farmer Field School under IPM in groundnut

Validation and promotion of IPM in groundnut is underway at *Bhatton ki Gali*, Jaipur, Rajasthan under the institute project "Development, refinement and area-wide implementation of IPM technology for groundnut crop". In *Kharif* season groundnut is mainly affected by collar rot and white grubs. For managing these pests, ICAR- NCIPM, New Delhi is disseminating IPM in groundnut through Farmer Field School wherein a training on seed and soil treatment with *Trichoderma* talc-based formulation was conducted on 14th May, 2024 in which 27 farmers participated. Talc based formulation of NCIPM/T-9 (*Trichoderma a*sperellum) was distributed and farmers were apprised about IPM interventions, mainly summer deep ploughing, soil application of enriched FYM with *Trichoderma*, use of methyl eugenol traps and need based application of 0.1% propiconazole for managing leaf spot.

## Farmer field school organized and critical IPM inputs distribution

Farmer field school was organised at *Uncha Majra* village, Gurugram, Haryana on 13th June, 2024 during which 25 farmers were apprised about the importance of IPM in cole crops. Farmers were advised to adopt raised bed nursery to avoid water logging which predisposes it to damping off and physiological death of newly emerged seedlings. They were informed to use safe, effective and low cost IPM inputs such as *Trichoderma* seed and soil application with FYM/vermi compost, neem based products, pheromone traps and need based application of label claim pesticides. During the occasion, critical IPM inputs were also distributed.

## Farmer Field School and Farmer Training Programme on IPM in Tomato

ICAR – NCIPM, New Delhi in collaboration with *KVK*, Bulandshahar, UP conducted a Farmer' Field School (FFS) on 06th June, 2024 at village Firozpur in which more than 75 tomato farmers participated. During the FFS, farmers were apprised about the need and importance of IPM in tomato and other vegetable crops. Emphasis was also given to nematode management in horticultural and field crops. Farmers expressed problems related to pest management in tomato for which adoption of IPM practices was suggested.

## Field day at Sitapur and Unnao, UP

The SCSP team from ICAR-NCIPM, New Delhi organized *"Kisan goshthi"* and agricultural input distribution programme"at *KVK*, Sitapur II on 6th March 2024 and at *KVK*, Unnao on 7th March 2024 under the Scheduled Caste Sub Plan Scheme, wherein 100 beneficiaries participated at each location. After interaction with the SC beneficiary farmers, agricultural inputs such as chargeable battery operated spraying machine, insecticide, fungicide, weedicide and taurpoline (Tirpal) sheets were distributed to 100 selected scheduled caste farmers. SCSP team briefed about extent of losses caused by biotic stresses and utility of the distributed items and exhorted farmers for reducing pesticide use and enhance crop productivity and their income. Shri Rakesh Kumar addressed various queries raised by the farmers during the interaction.

## *Kisan Goshthi* and input Distribution Programme at Raisen, MP

SCSP team from ICAR-NCIPM, New Delhi and *KVK*, Raisen (M.P.) organized "*Kisan goshthi"* and agricultural input distribution programme"under the Scheduled Caste Sub Plan Scheme on 15th February 2024. The programme was organized for the beneficiaries of *Samnapur Kalan* and *Peepalpani* of Raisen district where 100 beneficiaries participated. During the program, agricultural inputs such as chargeable battery operated sprayer machine, insecticide, fungicide, weedicide and taurpoline (Tirpal) sheets were distributed to 100 selected scheduled caste farmers by the Director, ICAR-NCIPM. Dr. Subhash Chander, Director, ICAR-NCIPM & chief guest of the programme addressed the gathering and shared his valuable thoughts on IPM and enhancing crop productivity and farmers' income.


## Demonstration of Agri –Drone in Sonepat, Haryana

Drone demonstration was conducted at village *Jakholi*, Sonepat on 29th January and at *Nahri* on 30th January, 2024 by ICAR NCIPM *Mera Gaon Mera Gaurav* team. Neem was sprayed in mustard, wheat and vegetable crops in about 10 ha through drone @ 10 l/acre in 8-10 min as against 200 l through knapsack sprayer. During the programme, information on importance of drones as a new technique for crop spray was explained to the farmers. Farmers actively participated and expressed satisfaction at drone demonstration.

## Efficacy of newer molecules against major storage insect pests

Ethyl formate (e-fume), a new fumigant molecule, was bio assayed against *Tribolium castaneum, Sitophilus oryzae, Rhyzopertha dominica, Callasobruchus maculatus* and *Trogoderma granarium* under laboratory conditions. The e-fume proved highly effective at low dosages ranging from 0.005 to 0.16 ppm against all life stages of the food grain insects of cereals and pulses at 24 hr of exposure periods. The ovicidal effect could also be observed by the susceptibility of the egg stage of the food grain insects. The project is being funded by Draslovka Services India (DSI) Pvt Ltd for generating multi-locational data.

## Farmer Field School (FFS) on *Kinnow* at Hisar, Haryana

Three farmer field schools (FFS) were organized at *Kisangarah* and *Dadoli* villages during January, March and July, 2024 with the participation of >120 farmers. Two training programs on production and nursery raising technology for kinnow from 13-17 February, 2024 and Production, Protection and Nursery management in *Kinnow* from 1-5 March, 2024 were organized at *KVK*, Sadalpur and *Dadoli* village. Validated IPM modules in *kinnow* mandarin was popularized and horizontally spread in 135-acre area covering three villages (*Kisangarh*, *Kharabarwala* and *Dadoli*) in Hisar district of Haryana. *Kinnow* fruit samples were collected to detect amount of pesticide residue left in the fruits. The level of pesticide residues in fruits collected from IPM plots was below the detection level while in non-IPM samples, acephate (0.079 ppm), imidacloprid (0.115 ppm) and tebuconazole (0.04 ppm) were detected.


**Dynamics of important pests of mango**

Population dynamics of important pests of mango was recorded during Jan-June, 2024 at Chintamani (Karnataka) under in-house project 'Development, validation and dissemination of IPM techniques for major pests of mango'. Highest mean leaf hopper population (11.2/panicle) was recorded in untreated control plots followed by farmers practice (FP) (6.5/panicle) while it was below ETL in IPM plots (2.9/panicle). An average of 25.6 fruit flies/week/trap were trapped in methyl eugenol traps during March-May. Powdery mildew and sooty mold were respectively lowest in IPM (0.52 & 0.48%) followed by FP (3.2 & 4.6%) and untreated control (7.0 & 7.7%) plots respectively. Natural enemies populations *viz.*, spiders, chrysopids and coccinellids were highest in IPM. Cost benefit ratio was highest in IPM (4.32) followed by FP (2.64) and untreated control (1.87).

**Drone Technology**

A new research program in collaboration with *KVK*, Baghpat has been initiated on 'Standardization of UAV Based Applications of Protectants in Agricultural Crops in rice crop in Northern India' funded by DAC, Ministry of Agriculture and Farmers' Welfare, GOI with the objectives to evaluate UAV based application of plant protectants using drone-based pesticide application modules for managing crop pests. Demonstrations were conducted in NCR in the adopted villages under *Mera Gaon Mera Gaurav* (MGMG) treating more than 240 hectares of cropped area of Guava, Kinnow, Wheat, Marigold, Lobia, Cucumber, Tobacco, Potato, Pea, Maize, Ber and Mango with neem oil (azadirachtin) 1500 ppm (0.15%) as a plant protectant with involvement of 2500 farmers in GautamBuddh Nagar, Sonipat, Patuadi, Jhajjrar, Bulandshahr and Mathura districts. Farmers were made aware of pros and cons of drone technology through interactive

## Meetings

### Mid-Institute Research Committee (IRC) meeting

Mid-IRC meeting was held during April 24-25, 2024 under the Chairmanship of Dr. Subhash Chander, Director, ICAR-NCIPM. All the ongoing research programmes of the centre were reviewed in the light of suggestions made during the previous Research Advisory Committee (RAC) meeting.


### Farmer meeting at village Sinhuan, Etawah

A meeting was organized on 30th May, 2024 at Sinhuan, Bharthna block, district Etawah in which 30 farmers of Saiphi and Sinhuna *gram panchayats* participated. Most of the farmers have been growing basmati rice for three years with PB1509 1692 and 1718 being the dominant varieties grown in the region under rice-wheat cropping system. Iron deficiency was the main problem in nursery, while in main field, YSB, rat, leaf folder, BPH, GLH, Gundhi bug, BLB, Blast, bakane, Sheath blight and brown spot were the major problems. Farmers used mainly chloropyriphos, phorate and fipronil injudiciously and did not know much about pest identification while 20% of the farmers followed green manuring with sesbania. During the interaction, farmers were apprised about IPM strategy in rice and Trichoderma was distributed to them for seed treatment.

### Farmer meeting at village Chitbhawan Etawah

A farmers meeting was organized on 30th May, 2024 at Chitbhawan village of Basehar block, Etawah district, UP in which 15 farmers participated. During the occasion, various queries raised by the farmers on rice pests and their management were addressed and were educated with rice IPM interventions. *Trichoderma* harzianum formulation (NCIPM strain) was provided to the farmers for seed treatment.

### Farmer Scientist interaction

On May 22, 2024, ICAR-NCIPM and RARS, Diphu, Karbi, Along, Assam Agriculture University organised Farmer-Scientist interaction during which major constraints in Rice and vegetable crop faced by farmers in the region were addressed. More than 35 farmers attended the programme.

## Input Distribution

On 20th June 2024, 6 vermi-compost production units were inaugurated by Dr. Mukesh Sehgal, ICAR-NCIPM at Village *Kalyanpur*, Khowai district, Tripura and were handed over to three *KVK* trained entrepreneur farmers with an objective to enhance socio economic status of farmers.


# Trainings

**HRD unit of ICAR-NCIPM is actively engaged in capacity building of various stakeholders in the area of Integrated Pest management.**

Five days online training programme on ‘Integrated Pest Management in plant protection’ was organized for 10 state department officials during 08-12, April 2024 in collaboration with State Department of Agriculture, Bihar with an aim to acquaint the participants with recent advances in the area of IPM and technology transfer to the farmers. During the programme, lectures on IPM in cereals, vegetables, oilseeds and other crops were delivered and participants were apprised about the applications of ICT in plant protection. Hands on training on trap technology, mass production and quality control of *Trichoderma* spp. &Pseudomonas spp. were also conducted. An exposure visit to the Centre for Protection Technology, ICAR-IARI and ICAR-AINP (Pesticide residue), New Delhi was organized to expose the participants on challenges in protected cultivation, residue management and climate change mitigation. A Webinar Lecture/Webinar by Dr. Jitendra Kumar, was organized under Scientist seminar Talk on ‘An Introduction on Plant-Microbe Affinity and Immunity’ on 19th January, 2024 in which scientists of the Centre actively participated.

## One Day Farmer Seminar on IPM for Sustainable Agriculture

ICAR-NCIPM, New Delhi, in collaboration with *Krishi Vigyan Kendra* (*KVK*), Khowai organized one day seminar on Integrated Pest Management (IPM) for Sustainable Agriculture which was attended by 172 farmers. Shri Sabendra Debbarma, Deputy Director, Horticulture (Khowai), elaborated on the support systems available to farmers through horticultural advancements. In his keynote address, Dr. Mukesh Sehgal, ICAR-NCIPM, New Delhi shared his extensive knowledge and experience in eco-friendly pest management. During the occasion, water pumps, seed oil press machines, spice grinders and bio-pesticides were distributed to farmers to enhance farmers' capacity to implement IPM practices and improve entrepreneurship.

## Awareness Programme on IPM at Tirap, Arunachal Pradesh

An awareness program was organised by *KVK*, TIRAP, Arunachal Pradesh on 07th February, 2024, at ----- in which 50 farmers participated. The program was inaugurated by Dr. Mukesh Sehgal, ICAR-NCIPM who stressed on use of IPM practices to reduce pest and pesticide load in various crops in the region. During the occasion, critical inputs were distributed to 50 farmers.

## Lecture delivered

On 9th February, 2024, Dr. Mukesh Sehgal delivered a lecture on ‘Recent Advancements of IPM: Opportunities and Constraints’ at Department of Entomology, Assam Agricultural University, Jorhat, Assam for faculty, students, researchers and female entrepreneurs. During the occasion, efforts were made to disseminate IPM knowledge to the participants.


## IPM Training Programme

On 19th February, 2024, Dr. Mukesh Sehgal, ICAR-NCIPM delivered a talk on ‘Important tools and techniques to implement the IPM’during five Day IPM Training programme for Tribal Farmers of Udaipur, Rajasthan. During the occasion, Dr. P. N. Meena, spoke on ‘Biocontrolas backbone of IPM’in which more than 100 farmers participated, who were also given critical inputs

## *Kissan Ghoshthi* Organised

On 20th Feb, 2024, a *Kissan Ghoshthi* was jointly organised by ICAR-NCIPM and *KVK* Sirohi, Rajasthan at *KVK* Sirohi, Rajasthan. Dr. Mukesh Sehgal, ICAR-NCIPM, New Delhi delivered a talk on safe and need based use of pesticides. Dr. P.N. Meena, ICAR- NCIPM and Dr. Chaudhary, *KVK* and Dr. Ravinder *SMS* (PP) along with other *SMS* of the *KVK* stressed on importance of IPM in crop management in the programme attended by 72 farmers.


## Training on Aromatic Rice IPM

On 11th May 2024, three days training program on Aromatic Rice IPM was conducted at College of Agriculture, CAU Imphal during which detailed information on IPM in aromatic rice was shared by Scientists from ICAR-NCIPM and CAU, Imphal. During the occasion, a training manual on 'IPM of Aromatic Rice'and extension folder on 'Cultivation Practices of Aromatic Rice' prepared by NEH team of CAU, Imphal was released.

# Events

## International Women's Day 2024

The International Women's Day was celebrated on 12th March, 2023 with the theme 'Inspire Inclusion' at the Centre. Dr. Sumitra Arora, Chairperson, Women Cell, apprised about the historical importance of the day and the contributions and achievements made by the women in all spheres of life. A workshop was organized by inviting Dr. Rohit, Ayurvedacharya, Naturopathist, Sahib Hospital, Chhatarpur, to create awareness about the role of Ayurveda in our daily routine to stay healthy and fit. Dr. Subhash Chander, Director, ICAR-NCIPM lauded the contribution of women in agriculture and nation building.

## Lecture on mathematical models for managing stored grain ecosystems

The Center hosted an International guest lecture by Dr. Digvir S. Jayas, President and Vice-Chancellor of the University of Lethbridge, Alberta, Canada on 19th February, 2024 on "Mathematical models as tools for managing stored grain ecosystems". Dr. Jayas emphasized the use of various sensors and models for monitoring activity of stored against grain pests for their timely management. Dr. Subhash Chander, Director, ICAR-NCIPM, felicitated Dr. Jayas with a memento on behalf of the Center.

## Transfer of technology under MGMG

*Mera Gaon Mera Gaurav* (MGMG) scheme is underway in 25 villages in NCR Districts of GautamBuddh Nagar, Sonipat, Patuadi, Jhajjrar and Bulandshahr involving 23 scientists and > 2000 farmers. Twenty five activities were conducted in these villages comprising technical know-how on importance of Agri-drones and their demonstrations, bio-agent enriched farm manureand natural farming, bio formulations, safety measures while applying agro-chemicals, ETL based pest monitoring and pest management and natural enemy conservation. Twenty five advisories were sent through SMS and social media.


## Awareness/Campaign Programs on Mission LiFE (Lifestyle for Environment)

Awareness/Campaign Programs on Mission LiFE (Lifestyle for Environment) aligned with the theme of World Environment Day 2024, 'Land restoration, Desertification and Drought Resilience' was organised by the Centre. Various activities were undertaken to scale up the vision of Mission LiFE into on-ground action. Scientists from the centre visited *Nilothi* village and nearby areas of Jhajjar, District in Haryana to discuss and educate the farmers and rural youths on Trichodermamass multiplication and vermicomposting and their applications. Farmers were encouraged to use bio-pesticides for safer food and better environment through reduced chemical pesticide applications to the crops. An interactive awareness programme was also organised at the Centre on rain water harvesting and its efficient use involving the staff.


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## अन्तर्भाग

अनुसंधान की गतिविधियां

बैठकें

प्रशिक्षण कार्यक्रम


विभिन्न आयोजन

## निदेशक की कलम से.....

(HIPV)

# अनुसन्धान की गतिविधियां



प्रक्षेत्र दिवस
दिनांक : 06 मार्च 2024


वीरेन्द्र कुमार सिंह कृषि विज्ञान केन्द्र, धौरा, उन्नाव
अनुसूचित जाति उप योजना (SC SUB PLAN) के अन्तर्गत
''इनपुट वितरण एवं प्रशिक्षण कार्यक्रम''
07 मार्च 2024
HYMATIC


राष्ट्रीय समेकित नाशीजीव प्रबंधन अनुसन्धान केन्द्र,
भा.कृ.अनु.प.- नई दिल्ली
अनुसूचित जाति- उपयोजना (SCSP) के अन्तर्गत
किसान संगोष्ठी एवं कृषि आदान वितरण कार्यक्रम
16 फरवरी, 2024
कृषि विज्ञान केन्द्र, रायसेन (म.प्र.)
HYMATIC


कृषि विज्ञान केन्द्र-हिसार

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IMPORTANCE OF INTEGRATED PEST MANAGEMENT IN AGRICULTURE


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DEPARTMENT OF CROP PHYSIOLOGY


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पांच दिवसीय संस्थागत प्रशिक्षण

## विभिन्न



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**संकलन**: नीलेश कुमार पटेल

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**सुभाष चंदर (□□□□□□□)**

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