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भारत 2023 INDIA

ICAR-IIHR

Newsletter

भा.कृ.अनु.प.- भारतीय बागवानी अनुसंधान संस्थान
हेसरघट्टा लेक पोस्ट, बेंगलुरु-560089, कर्नाटक, भारत

ICAR - INDIAN INSTITUTE OF HORTICULTURAL RESEARCH

Hesaraghatta, Bengaluru-560089



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Azaadi Ka
Amrit Mahotsav

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Director's Desk

At the outset, I am extremely happy to join the premier research institute, ICAR-IIHR as Director in June, 2024. The year 2024 began with the maiden visit of Shri Arjun Munda, Union Minister of Agriculture & Farmers Welfare and Tribal Affairs, Govt. of India to the institute in January. The visit facilitated crucial interactions between the Minister and various stakeholders. Further, I am delighted to note that the ICAR-IIHR has successfully organized three important events viz., National Conference on Recent Trends and Future Prospects of Floriculture in India, National Horticulture Fair and Triphal Diversity Show for the benefit of various stakeholders and most importantly for farmers.



Identification of three promising hybrids in mango, high yielding wax apple line (CHESM-1) and jackfruit accessions for cooking purpose are important in perennial fruit crops. The ICAR-IIHR has played a significant role in identification of farmer's variety of jamun (Round the year Jamun) for

linking biodiversity to livelihood security. Two high yielding okra lines were identified with resistance to YVMV and tolerance to ELCV that were evaluated in hotspot area. Development of Mobile App on okra cultivation in Hindi, Telugu and Kannada caters to the needs of okra farmers in different states. In flower crops, two dwarf crossandra mutants with important traits of attractive flower colour and longer shelf life were developed. Adoption of ICAR-IIHR technology on Mushroom had raised the income of beneficiary women mushroom growers by 100-200%. Two vegetable varieties viz., Arka Pradhan (Pole Dolichos) and Arka Priya (Garden Pea) were Gazette notified by CVRC. The State Varietal Release Committee (SVRC) for Horticultural crops for the state of Karnataka has recognized 4 varieties of flower crops and 3 varieties of medicinal crops for release. I wish and ensure the ICAR-IIHR would come out with many achievements in future.

(Dr. T. K. Behera)
Director

Research highlights

Fruit crops

Promising hybrids in mango

The mango hybrid **R3P16** (Amrapali x Vanraj) has dark orange colour pulp with high TSS of 20.55°Brix, average fruit weight of 301.9 g and high pulp recovery of 72.84%. Average fruit length was observed to be 10.83 cm and fruit width of 7 cm. Another mango hybrid **R3P22**: (Amrapali x Vanraj) has orange pulp colour TSS of 23.0°Brix, average fruit weight of 219.7 g, fruit length of 8.22 cm and pulp recovery of 69.35%. The hybrid **R5P3** (Amrapali x Vanraj) has attractive yellow orange peel colour with red tinge, pulp colour of yellow orange, average fruit weight of 380.7 g, high TSS of 23.44°Brix and pulp recovery percentage of 73.12.



R3P16: (Amrapalli x Vanraj)

R3P22: (Amrapalli x Vanraj)



R5P3: (Amrapalli x Vanraj)

The hybrid **R5P23** (Amrapali x Vanraj) has medium sized fruits with average fruit weight of 282.5 g, orange pulp, high pulp recovery of 73.12% and TSS of 23.4°Brix.



R5P23: (Amrapalli x Vanraj)

Wax apple: Regular bearing and high yielding wax apple promising line **CHESM-1** was identified for release. The fruits are seedless and have attractive pink colour. The average fruit weight ranged from 35 to 40 g with more than 90% moisture content and 100 per cent edible portion.



Fruits of CHESM-1

Jackfruit: The accessions of jackfruit with Yellow colour flakes (V2 (Panruti), Haridas (H), T1 (Panruti) and Red colour flakes (OP- KS, 34/19) were found suitable for table purpose. For Tender jack/Cooking purpose, Vietnal early, Palur-1 and Haridas (B) were found suitable.

Dragon fruit: In dragon fruit (*Hylocereus* sp.), lethal doses (LD_{50}) for gamma radiation were 674.28 Gy and 731.06 Gy for LD_{50} in cv. Red and White, respectively. GR_{50} value for seedling height, shoot and root length was observed in 656.27 Gy, 738.22

Biomass estimation model for guava: Allometric parameters such as number of primary and secondary branches, girth of primary and secondary branches, tree-height, tree-volume, basal-diameter, diameter-below-graft union, were measured on 20 selected guava trees of popular variety Allahabad Safeda, Sardar, L-49, in the age group between 9 - 41 years. Root: Shoot ratio was found to be 1: 0.29.

Above ground biomass (AGB): Two forms of models viz., multiple linear regression (MLR) model and power model were used to estimate the tree biomass.

MLR model: $AGB = 40.51 - 0.78 \text{ PBG} + 5.56 (\text{PBG} \times \text{NPB})$ $R^2 = 0.941$

Power model: $AGB = 11.52 (\text{PBG} \times \text{NPB})^{0.839}$ $R^2 = 0.940$

Screening of wild species of guava for combined resistance to nematode and wilt revealed that the wild species *Psidium cattleianum* var. *cattleianum* and *Psidium cattleianum* var. *lucidum* are having resistance to *M. enterolobii* and *Fusarium oxysporum* f.sp. *psidii*, to use as a gene donor for resistance breeding.



P. cattleianum* showing combined resistance to wilt pathogen and nematode *M. enterolobii

Linking biodiversity to livelihood security-Round the year Jamun: An unique accession, The round the year Jamun, has been identified and the farmer Shri N Kumar



Farmer receiving certificate from PPV&FRA authorities

was awarded by PPV & FRA with certificate (REG/2023/0124). The unique accession comes to bearing in June-July and Nov-Dec identified from the field of the farmer Sri N. Kumar, Ajjihalli village, Koratagere taluk, Tumkuru district of Karnataka. The accession bears fruits during off season also with better yield (80 kg per tree). The fruits are produced in clusters of 9. The fruits are oblong, in shape and weighing about 8 to 13 g with an average weight of 11.3 g. The pulp seed ratio is 6.1, which higher than Dhoopdal. The fruit colour is dark purple and pulp is pinkish white in colour with TSS of 13.84 °Brix.



Round the year Jamun

CHES Sapota-1 (IC0642151; INGR23108) with extra-large fruits:

The fruits are round shaped with fruit size of 6.7 cm x 6.6 cm with mean weight of 158 g and TSS of 14.95°B. The average yield is 42 kg per tree (230 fruits per plant) showing high degree of field tolerance to *Phaeophleospora* leaf spot. The fruit shape index varies from 0.9 to 1.1.



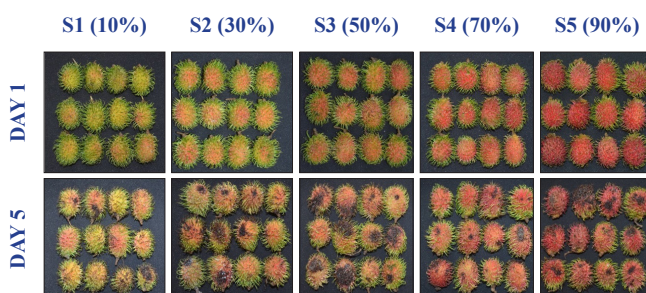
High yielding Malayan apple accession (IC-0648522):

The fruits are bell-shaped with length exceeding 5.5 cm and breadth of 5 cm. Each fruit weighs more than 55 g and has pulp recovery rate of 97%. The pulp is 1.5 cm thick, with a TSS of over 5.5°Brix, acidity of 0.35%, and vitamin C content of 20 mg per 100 g. It is a heavy bearer with average yield of 50 kg per tree.



Ideal stage of fruit maturity in Rambutan

In rambutan, optimum duration to complete reproductive phase cycle from bud initiation to fruit harvest was estimated at approximately 190 days. Shelf-life studies of the fruits harvested at different stages of maturity (10,30,50, 70 and 90% color development) revealed that those harvested at 70% color development exhibited maximum shelf life.



Storage life of rambutan fruits harvested at different stages of maturity

Vegetable crops

Okra: Two okra lines namely IIHR-385-1-1-5 and IIHR-299-1-2-2 were identified for high yield, good quality and resistance to YVMV and tolerance to ELCV at Hotspot area of Villupuram Tamil Nadu during Summer 2024



YVMV susceptible check (Acc 1685) IIHR-385-1-1-5 (yld 21/h ,YVMV -R) YVMV susceptible check (Acc 1685) IIHR-299-1-2-2 (Yld 23 t/ha) Resistant to YVMV

Spent Mushroom Culture/Substrate as media for soilless cultivation: The radish variety Arka Nishant performed better in growing media of AFC (Arka Fermented Cocopeat) + SMC (Spent Mushroom Culture) in 1:1 ratio with maximum root length (31.5 cm), root weight (222 g) and total biomass (488 g per plant). AFC+SMC is suitable media for soilless cultivation of radish.



Performance of radish var. Arka Nishant under soilless cultivation

Okra cultivation and mobile app in Hindi, Telugu and Kannada: The mobile app on Okra cultivation has been developed in three languages namely Hindi, Kannada and Telugu to cater to the needs of regional farmers. The app includes various features viz., Crop cultivation aspects, Disease management, Pest management, FAQs, Varieties, etc. The diseases and pest management modules



are available as dynamic sliders. The application is available in Google play store, IIHR website and the URL <https://mobile-appiihr.web.app>.

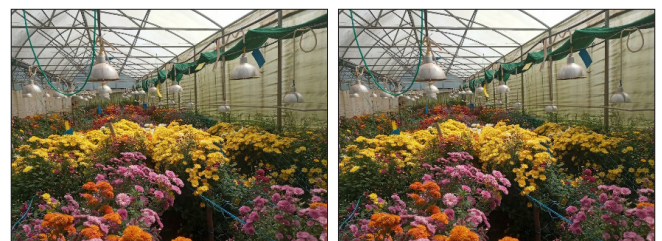
Flower crops

Promising lines of Crossandra: Crossandra Mutant-3 with dwarf growing habit, highest rachis length, peduncle length, highly floriferous, more longevity of flowers in the plant and attractive flower colour (Orange - Red group 32A of RHS colour chart) was found promising for pot culture. Crossandra Mutant-2 was found promising for loose flower purpose with medium sized flowers, thicker petals, strong petal stalk, higher yield and higher shelf life



Chrysanthemum varieties for suitability in protected condition

Significantly better flower quality parameters were observed in the photoperiodic module consisting of long days (16 h light, 8 h dark) followed by short days (8 h light, 16 h dark) up to flower bud initiation across different varieties of cut chrysanthemum. The variety Arctic Queen registered maximum flower diameter followed by IIHR 5-14. Number of branches were more in IIHR 5-14 and IIHR 9-9.



Vertical farming module for quality flower production of *Limonium sinuatum*

Planting density and yield of *Limonium* was increased by 6 times with utilization of 12' vertical space of the polyhouse. Water saving to the tune of 80% was obtained in vertical farming compared to conventional farming. Effective space utilization (vacant floor space) of vertical structure by use of grow bags for production of cut foliage and upper inner tiers of the structure for production of shade loving potted ornamentals is also possible.



Non-parametric stability models in China aster: Non-parametric approach based combined index of all 6 traits and stability over years revealed that 15-41-3, 15-41-1 and 15-41-16 lines of China aster were superior. R based macros were developed for developing all the non-parametric combined indices.

Mushroom

Impact of ICAR-IIHR technology: An explorative study on the extent of women empowerment due to selected ICAR-IIHR technologies revealed that the women mushroom growers (30 sample size) had high Livelihood Improvements (LI) Score and almost all beneficiary women mushroom growers had shown 100-200% increase in the income level & 50-100% decrease in the food expenditure per year after mushroom technology adoption. The major constraints and technology gaps perceived by women mushroom growers are limited access to quality spawn (100%), poor market information and access (83.3%) and lack of standardized practices & pest and disease management (76.7%).

2. ITMC identified varieties/technologies CVRC Gazette Notification of ICAR-IIHR varieties in March 2024

Arka Pradhan (Pole Dolichos)

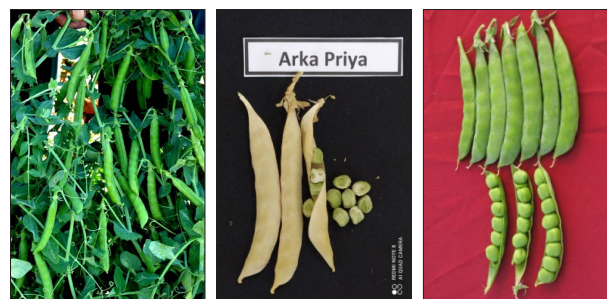
Arka Pradhan (Pole Dolichos) variety is

recommended for Zone-IV (Punjab, Uttar Pradesh, Bihar and Jharkhand). It is photo-insensitive type with shiny, tender and smooth pods and suitable for *Kharif* and *Rabi* seasons. Yield level is 35 t ha⁻¹ in 120 days duration.



Arka Priya (Garden Pea)

Arka Priya (Garden Pea) is recommended for Zone-I, IV and VIII (Himachal Pradesh, Jammu and Kashmir, Uttaranchal, Punjab, Uttar Pradesh, Bihar, Jharkhand, Karnataka, Tamil Nadu Goa and Kerala). It is a mid-season variety, Pods are round, medium long, Pod yield 12 t/ha in 90 days, Tolerant to rust and powdery mildew diseases.



SVRC released varieties

Flower and Medicinal crops: Arka Amar and Arka Kesar varieties of *Gladiolus*, Arka Prabhavi and Arka Divya varieties of *Centella asiatica*, Arka Ashwagandha variety of *Ashwagandha* and Arka Dhanvantari and Arka Daksha variety of Velvet bean were approved for release in the State seed sub-Committee meeting held on 13th March, 2024 for Horticultural crops for the state of Karnataka

3. New initiatives

IIHR Signed MoU Technical Partner-Karnataka Exotic Fruit Association (KEFA), Bengaluru, Deccan Exotics FPO on Kamalam Fruit-Hyderabad on 07.01.2024

Farmer's Field School: Initiation of Farmer's Field School and Follow up visits and monitoring of farmer's field school, under the NABARD funded project entitled "Demonstration of Integrated Farming System Practices for the Enhancement of Income of Farmers Under Mango-Based Cropping System" on 08.02.2024 to 22.05.2024 and till date in Chikkaballapura district.

Diagnostics Services For The Phytosanitary Certification: The ICAR-IIHR has contributed for the Revised Standard Operating Procedure for Phytosanitary Certification. For the purpose of prohibiting and regulating the import of agricultural commodities in to India, the Central Government brought in an order through legislation named as Plant Quarantine (Regulation of Import into India), 2003. To facilitate the smooth execution of inspection as well as for giving test reports for horticultural commodities and enable the seed industry to have the "easy to do business", the standard operating procedure (SoP) was revised last year. The revision of SoP has enabled the professional service function operations to deliver more efficiently and generate revenue significantly. The duration to give the test reports has been reduced to 5-7 working days. During 2023-24, ICAR-IIHR offered services to 176 Seed Firms for 69 types of commodities (seeds or planting materials of horticultural crops) and issued 976 test reports. The service provided by ICAR-IIHR has enabled the seed industry to export the seeds that indirectly enabled the enhancement in the foreign exchange.

4. News and Events

Visit of Union Agriculture Minister Shri Arjun Munda to ICAR-IIHR, Bengaluru

The Union Minister of Agriculture & Farmers Welfare and Tribal Affairs, Shri Arjun Munda, visited ICAR-IIHR, on 7th January. Shri Munda inaugurated of the 'Techno-Expo,' showcasing ICAR-IIHR technologies, and the Farmers Facilitation Centre for central sector schemes under SCSP, STC & NEH and engaged in insightful discussions with stakeholders. The Minister stressed the importance of aligning production

standards with international norms to ensure competitiveness. The visit witnessed the exchange of Memorandums of Understanding (MoUs) with organizations such as the Karnataka Exotic Fruit Farmer's Association and Deccan Exotics India Producer Company Limited. Additionally, MoUs were established with Greenvault Ganga Pack Private Limited, in partnership with BEST-HORT, and Kalaisingam Academy of Research and Education for education and training. The publications such as "Hybrid Seed Production Techniques in Okra," "Production Technology for Cucumber Var. Arka Veera," and "Improved Technologies for Early and Off-season Cultivation of Vegetables and Fruit Crops for the Farmers of Jharkhand State," were officially released. In his closing remarks, Honorable Union Agriculture Minister Shri Arjun Munda urged the scientists to align their activities with the vision of "Atmanirbhar Bharat" and expressed his best wishes for ICAR-IIHR to achieve greater heights in the coming years.



National Conference on "Recent Trends and Future Prospects of Floriculture in India: The ICAR-IIHR, Bengaluru in collaboration with the Society for Promotion of Horticulture, Bengaluru organized the National Conference from 9th to 11th January, 2024. The significance and dynamic domain of floriculture is emphasized in the National Conference and the deliberations could bring out important action points with emphasis on precision floriculture, market oriented floriculture research in Public Private Partnership mode, cutting edge technologies *viz.*, agrivoltaics, hydroponics, aeroponics and aquaponics, edible flowers, Floritourism in areas rich in agro-biodiversity and cluster farming. The conference also envisaged the importance of research on location specific indigenous ornamental plants for inclusion in the Smart City Mission of Government of India. Flower growers who had adopted ICAR-IIHR

varieties and technologies and played a crucial role in their popularization were also felicitated during the event.



QRT Review meeting of AICRP on Medicinal and Aromatic Plants and Betelvine: ICAR-IIHR hosted the QRT review meeting of AICRP on Medicinal and Aromatic Plants and Betelvine on 29th February, 2024. The QRT team was headed by the Chairman, Dr. N.C. Gautam, Formerly Vice Chancellor, Mahatma Gandhi, Chitrakoot Gramodaya Vishwavidyalaya, Satna, Madhya Pradesh.



National Horticulture Fair-2024 held at ICAR-IIHR

The yearly event of National Horticulture Fair-2024 (5-7 March, 2024) witnessed gracious presence of Sushri Shobha Karandlaje, Hon'ble Union Minister of State for Agriculture and Farmers' Welfare, Govt. of India who emphasized the adoption of climate resilient crop varieties and technologies for equipping the farmers in sustaining the production under the adverse climatic conditions and focus on value addition. The participation of 70000 stakeholders from 22 states in the three-day fair highlights the importance of live demonstrations and dissemination of latest technologies.



International Yoga Day:

The 10th International Yoga Day (IYD) was observed on 21st of June, 2024 with a theme 'Yoga for Self and Society'



both at main institute and research centres. The Chief Guest, Mrs. Chethana Prasad, demonstrated the International Yoga Day protocols, which the participants followed. She also explained the benefits of each asana and guided methods of doing, the do's and don'ts for each posture. Dr. Tusar Kanti Behera, Director of ICAR-IIHR emphasized the importance of incorporating yoga into daily routines to keep the mind and body calm and energetic and to manage daily stress. More than 120 participants, including scientists, staff, and students from ICAR-IIHR, attended the event and benefited from the program.



Awareness programme on Protection of Plant Varieties and Farmers' Right Act, 2001: ITMU, ICAR- IIHR, Bengaluru and ICAR-Krishi Vigyan Kendra, Hirehalli jointly organised the at ICAR-KVK Hirehalli on 29th February 2024. Fifty participants attended the programme.



Awareness programme on Protection of Plant Varieties and Farmers' Right Act, 2001 at ICAR-KVK Hirehalli

World Intellectual Property Day: ICAR-IIHR organized the **World Intellectual Property Day** with the theme “IP and Sustainable Development Goals: Building our Common Future with Innovation and Creativity” on 30th April 2024. Dr. R. Kalpana Sastry, Former Joint Director, ICAR-NAARM & Founder a-Idea, MD Aghub, PJTSAU, Hyderabad was the key speaker



Brainstorming & Fruit Diversity Show on Papaya and Passion Fruit” at CHES, Chettali on 17th January, 2024: More than 150 growers have participated and displayed 70 genotypes of papaya and 40 genotypes of passion fruit. Lectures on Good Agriculture Practices in Passion Fruit, Papaya Cultivation Integrated Pest Management in Papaya and Passion Fruit and Integrated Disease Management in Papaya and Passion Fruit were arranged.



Triphal Diversity Show 2024: The ICAR-IIHR organized the Triphal diversity Show during 31st May to 2nd June, 2024 in which varietal diversity of 300 mango, 100 jackfruit and 100 bananas were showcased in collaboration with ICAR-NRCB, Tiruchirapalli. In the inaugural address, Dr Sanjay Kumar Singh, DDG, Horticultural Sciences laid emphasis on national and global implications of mango, jackfruit and banana cultivation for the sustainable livelihoods of farmers. Dr. Prakash Patil, Director, ICAR-IIHR highlighted the need for potential collaboration, exchange and improvement of production and value chain to

attain the best possible outcome for enhancing economic returns. Dr. R. Selvarajan, Director, ICAR-NRC, Banana emphasized that all parts of banana are useful and more focus has to be given on area expansion and increased productivity of banana. Ms. Harriet white, Vice Consulate from Australian consulate, Bengaluru appreciated the efforts of ICAR-IIHR in showcasing the Triphal diversity. Various custodian farmers were felicitated for their role in conservation of unique germplasm of mango, banana and jackfruit.

5. Human Resource Development

A. Training courses organized

HRD training on ‘E Governance’ organized at ICAR –IIHR, Bengaluru from 6th to 8th May 2024; 44 scientific, administrative and technical staff were trained on various E-governance tools.



HRD training on ‘Induction and Orientation Training Programme for the newly recruited Technicians T-1) organized at ICAR –IIHR, Bengaluru for one month from 15th May to 14th June 2024; 31 newly recruited technicians were trained on various aspects of horticultural crops production.



B. Specialized trainings attended

Trainee	Name of Training Program	Place	Date
Dr G Karunakaran	Winter School International training programme on Technological Advances leading to smart farming & Agripreneurship	Online Training	01.01.2024-30.01.2024
Dr. Safeena S.A	Online training of PPVFRA about "Field Gene Bank Maintenance of perennial crops" organized by PPVFRA,GoI, Ministry of Agriculture and Farmers Welfare, New Delhi	PPVFRA, New Delhi	12.01.2024
	Recent Advances in Data Analysis and Applications,	ICAR-IASRI, New Delhi	16.01.2024-22.01.2024
Dr. Ramya H R	Workshop on Gender Budgeting	FICCI, New Delhi	22.01.2024.
Mr H.D Parashuram Dr Onkar Naik Mr Deenadayalan	Drone Pilot Training Programme	Pune, Maharashtra	11.02.2024-15.02.2024
Dr M Arivalagan	International Training course on the Production and use of food composition data in nutrition	SAARC FOODS and ICMR- National Institute of Nutrition, Hyderabad, India	19.02.2024-24.02.2024
Dr E Srinivasa Rao	Building and leading effective teams	Administrative Staff College of India	21.02.2024-23.02.2024
Dr Shamina Azeez	Transformative Pathways Science, Technology and Innovation for Attaining the Sustainable Development Goals	Institute of Public Enterprise, OU Campus, Hyderabad	26.02.2024-01.03.2024
Mrs S Saroja and Dr S Onkar Naik	Unique Identification Characteristics of insect pests and their damaging symptoms and management	ICAR-NBAIR, Bengaluru	18.03.2024-22.03.2024
Dr. Safeena S.A.	International Training Programme on "Agri Tech 2050: A Next Generation Training for Agripreneurship & Innovative Horizon"	Telangana State Horticultural University, Hyderabad in collaboration with Just Agriculture Education Group	05.05.2024-20.05.2024
Dr Prathibha M.D.	Omics analysis in the era of AI	ICAR-IASRI, New Delhi	06.06.2024-12.06.2024
Dr Reena Rosy Thomas and Dr. Ramya H.R.	Workshop on Generative AI Tools for Agriculture	ICAR-NAARM, Hyderabad	26.06.2024-28.06.2024

C. Any other

6. Post Graduate Education

(A) List of ICAR-IARI students awarded doctoral degree on 9th February, 2024

Students Name	Roll No	Division	Name of the Guide	Thesis title
Ms. B. H. Sushmitha	11516	FSC	Dr. T. Sakthivel	Evaluation and characterization of (Arka Sahan) custard apple progenies for self fruitfulness
Mr. Nitin P S	11512	FSC	Dr. M. Sankaran	Evaluation of pummelo (<i>Citrus grandis</i> L) progenies for bitterness and rind thickness
Ms. Lavanya H N	11631	VSC	Dr. B. Varalakshmi	Genetic analysis of yield, yield parameter and downy mildew resistance in ridge gourd
Mr. Yathish V C	11623	VSC	Dr. M. Pitchaimuthu	Validation and fine mapping of QtL resistant to WBNV in watermelon
Ms. Sangeetha Priya. S	11500	FLA	Dr. C. Aswath	Standardization of vertical soil-less system for quality cut flower production of gerbera varieties Arka Nesara
Mr. Vittal Kamble	11595	PHT	Dr. C. K. Narayana	Standardization of maturity indices and post- harvest protocol from domestic and export marketing of avacado (<i>Persea anexicana</i> Mill.)
Mrs. B. Vanlalneihi	10900	VSC	Dr. K. Madhavi Reddy	Mapping Of anthracnose (<i>Colletotrichum</i> spp) fruit rot resistance genes in <i>Capsicum</i> spp
Mrs. Anushree Anand	11104	PHT	Dr. D. V. Sudhakar Rao	Effect of hot water treatment and modified atmospheric packaging on storage life of mango (<i>Mangifera indica</i>)
Mr. Sourav Mohapatra	11132	VSC	Dr. E. S. Rao	Studies on genetic of resistance to gummy stem blight in watermelon
Ms. Soudamini Karjee	11030	FLA	Dr. C. Aswath	Production of bulbs through bioreactor

Ms Bindu, H. (Roll NO. 11591) of IARI-IIHR, Bengaluru has successfully completed her Ph. D. in Post harvest Technology (Horticulture) on 15th February 2024. Thesis Title: Standardization

of storage temperature and pretreatments for extension of storage life of muskmelon under the guidance and supervision of Dr. D.V. Sudhakar Rao,

Study tour to germplasm centre and field gene banks: Two day study tour was organized for IARI-IIHR M.Sc and Ph.D students of 1st year of Fruit Science by Dr Anuradha Sane and Dr. Vasugi. The students were taken to CHES, Chettalli and explored the genebank of minor fruits, as well as newly developed varieties. Visited farmers' fields in Ooty where strawberry cultivation was done organically and under protected conditions. Temperate fruit cultivation, including peaches, pears, and plums were shown. An exposure visit to SIM's Park and the Ooty national botanical garden was also arranged.



(B) ALLOCATION OF RESEARCH GUIDES TO 2023-24 BATCH STUDENTS OF ICAR-IARI, NEW DELHI

All the 62 students (26 M.Sc and 36 Ph.D) admitted during the 2023-24 academic session at ICAR-IIHR, Bengaluru hub were allotted research guides based on the BOS meeting held on 21/3/2024. This includes 20 M.Sc students to ICAR-IIHR, Bengaluru, four to CPCRI, Kasaragod and

two to CTCRI, Trivandrum. Among the 36 Ph.D students, 24 students were allotted to ICAR-IIHR, Bengaluru, 10 students to NBAIR, Bengaluru and two students to CTCRI, Trivandrum.

(C) Course offered during the I semester of 2023-24 sessions

A total 69 courses across 13 disciplines were offered to both M.Sc and Ph.D students during the I semester of 2023-24 academic session of ICAR-IARI, New Delhi.

(D) Fresher's day celebration at ICAR-IIHR

Ph.D. and M.Sc. Students Fresher's Day was celebrated at ICAR-IIHR, Bengaluru on 26th March, 2024.



Prof. (Dr.) Sanjay Kumar Singh, Honourable DDG (HS), ICAR, New Delhi graced the occasion as the Chief Guest.

(E) Student academic activities

All the 2021-22 batch of 14 Ph.D. students have successfully delivered their Outline of Research Work (ORW) seminar on 2nd January, 2024 and 2022-23 batch of 15 students on 24th May, 2024. Assessment committee held on 3rd January, 2024 recommended all the 14 students of 2021-22 to be upgraded to SRF position.

7. Transfer of Technology

Training Programs Organized

On-Campus Trainings

Title of the Program	Date	No. of participants
ICAR-IIHR, Bengaluru		
Entrepreneurship Mushroom spawn production	03.01.2024-05.01.2024	15
Entrepreneurship Mushroom cultivation	08.01.2024-12.01.2024	27

Flower cultivation for the Tribal farmers of Tumkuru, Karnataka (TSP)	06.01.2024	70
Water melon and musk melon cultivation and input distribution for the farmers of Tumkuru dist. Karnataka	06.01.2024	100
Technologies in chilli and onion crop production value addition for tribal farmers of Theni and Namakkal district (TSP)	07.01.2024	89
Soil and water management in vegetable crops production	08.01.2024- 09.01.2024	33
Exposure visit cum on campus training to ICAR-IIHR Bengaluru to participate National Seminar flower technologies by tribal farmers of Tumkuru district of Karnataka (TSP)	11.01.2024	50
Training and exposure visit to ICAR-IIHR Bengaluru to participate National Seminar flower technologies by tribal farmers of Mysore district of Karnataka ICAR-IIHR, Bengaluru (TSP)	11.01.2024	57
Improved production technologies, Post harvest processing and Value addition of Fruits' for tribal farmers of Jharkhand State under MIDH	12.01.2024- 17.01.2024	59
Training on cultivation aspects of Dragon fruit & Jack fruit on at IIHR, Bengaluru to famers and officials of Department of Horticulture, Coimbatore	30.01.2024	20
Improved Production Technology, Post-Harvest Processing and Value Addition of Selected Fruit Crops (Jack fruit, Tamarind, Custard apple. Avocado and Kamalam fruit) to farmers of Jharkhand state under MIDH scheme	12.02.2024- 17.02.2024 (Batch-I) 26.02.2024- 28.02.2024 (Batch II)	20
Improved production technologies, Post harvest processing and Value addition of Fruits' for farmers of Jharkhand ICAR-IIHR, Bengaluru(On campus Training Programme (MIDH)	12.02.2024- 17.02.2024	52
Training on Hydroponics and Vertical Farming for famers from Sarkarsamakulam, Coimbatore, Tamil Nadu under Agriculture Technology Management Agency	13.02.2024	20
Capacity building program and Entrepreneurship development in Horticultural technologies for The FPOs of Tamil Nadu under TNAU-FPO project	14.02.2024- 18.02.2024	108

FSSAI- sponsored workshop on ‘Food Safety’ The Role of Surveillance, Detection and Control system Advances, was conducted in the Food Safety Referral lab, ICAR-IIHR, Bengaluru 110 stakeholders from the food laboratories of public sector as well as private sector and research institutes across the country	20.02.2024	110
Cultivation, Primary Processing, Quality Aspects and Marketing of Commercially Important Medicinal Crops and Jasmine”	20.02.2024	30
Nutrient Management in Horticultural Crops for SC/ST farmers of Karnataka (Mandya, Tumakuru, Chitradurga, Chamarajanagar, Kolar) in collaboration of KSCST, IISC, Bengaluru	22.02.2024- 23.02.2024	22
Interstate Training Programme Cum Exposure Visit on “Hydroponics and Vertical Farming for trainees from Chennai, Tamil Nadu	27.02.2024- 29.02.2024	30
Soil, plant and water analysis for nutrient recommendation in horticultural crops	27.02.2024- 29.02.2024	08
Improved production technologies, Post harvest processing and Value addition of Fruits’ for farmers of Jharkhand ICAR-IIHR, Bengaluru (MIDH)	04.03.2024- 06.03.2024	46
Soilless Culture/Cocoponics for terrace/roof top/ vertical gardening	05.03.2024- 07.03.2024	35
Training and exposure visit to National Horticultural Fair and Horticultural technologies for Mysore district farmers ICAR-IIHR, Bengaluru (TSP)	05.03.2024	50
Training and exposure visit to National Horticulture Fair and training to ICAR-IIHR technologies for tribal farmers of Dharmapuri District of Tamil Nadu (TSP)	05.03.2024	300
Composting of Farm/ Kitchen Wastes	5.03.2024-7.03.2024	24
Training on "Value Addition and Waste Utilization of Flowers	06.03.2024	20
Workshop on Hi-Tech Farming Techniques “(Hydroponics and Vertical Farming)”	06.03.2024	38
Exposure visit for the farmers of Kadavur block of Karur District of Tamil Nadu under SSEOERS-ATMA on Chilli cultivation ICAR-IIHR, Bangalore (Exposure visit Programme (ATMA))	06.03.2024	40

Exposure visit for the farmers of Kundadam block of Tirupur District of Tamil Nadu under ATMA on Chilli varieties, hybrids and cultivation ICAR-IIHR, Bengaluru (Exposure visit Programme (ATMA))	07.03.2024	20
Entrepreneurship Mushroom cultivation training	12.03.2024-14.03.2024	20
Training on Pollen cryopreservation in vegetables for hybrid seed Production”	18.03.2024-22.03.2024	3
Awareness Class regarding the Agri business Incubation, Startup Eco system and its activities to students of Acharya Bengaluru B-School	08.04.2024	38
Pollen cryopreservation in vegetables for hybrid seed Production	20.05.2024-24.05.2024	3
Mushroom cultivation training	24.05.2024	20
Management Strategies for export and advances in production technology of Vegetable, Fruits and Ornamental crops for the Extension Officers of Kerala at ICAR-IIHR, Bengaluru- Batch III	05.06.2024	25
Exposure visit cum training to the Virudhunagar district farmers under ATMA on flowers, fruits and vegetable cultivation ICAR-IIHR, Bengaluru (Exposure visit Programme (ATMA))	18.06.2024-20.06.2024	120
Entrepreneurship Mushroom spawn production training	19.06.2024-21.06.2024	16
Production of Fruit and vegetable powder in collaboration with BESST-HORT	20.06.2024-22.06.2024	
Advanced technologies in Horticulture for the farmers of Karnataka under RKVY	23.06.2024-24.06.2024	20
Entrepreneurship Mushroom cultivation training	24.06.2024-28.06.2024	20
Soil, plant and water analysis for nutrient recommendation in horticultural crops	26.06.2024-28.06.2024	18
Improved vegetable production technologies” for the tribal farmers of Tamil Nadu under TNTSP	27.06.2024-28.06.2024.	40
EDP on quality vegetable seedling production	27.06.2024	12
CHES, Chettalli		
Scientific Cultivation of Avocado, Rambutan, Mango and Jack fruit to Technical Staff of State Horticultural Mission (SHM), Kasaragod District, Kerala	18.01.2024-20.01.2024	12

Training cum awareness programme on household waste management and composting for home gardens in urban areas	05.01.2024	66
Awareness cum training programme on basic virtue of rooftop gardening	12.01.2024	83
Scientific Cultivation of Acid Lime, Avocado, and Teasel gourd” for Farmers of Tenkasi, Tamil Nadu	12.02.2024- 14.02.2024	12
Training programme on “Scientific Cultivation of Acid Lime, Avocado, and Teasel gourd” for Farmers of Virudhunagar, Tamil Nadu	12.03.2024- 14.03.2024	15
Induction and Orientation Training Programme for Newly Recruited Technicians (T-1)	22.05.2024 07.06.2024	4
CHES, Bhubaneswar		
Training cum awareness programme on household waste management and composting for home gardens in urban areas	05.01.2024	66
Awareness cum training programme on basic virtue of rooftop gardening	12.01.2024	83
Sensitization workshop on Importance of virus indexing in major horticultural crops	31.03.2024	25



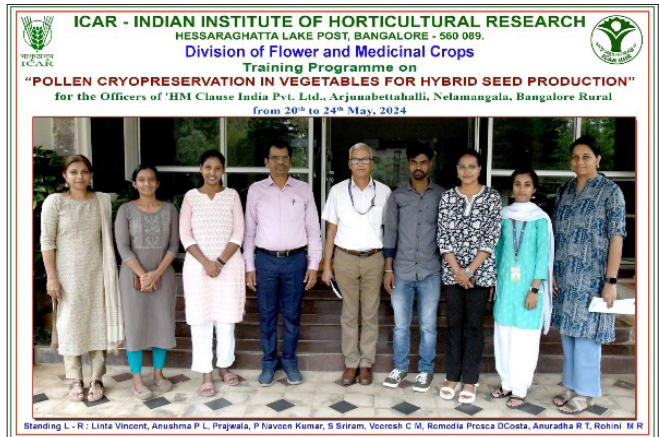
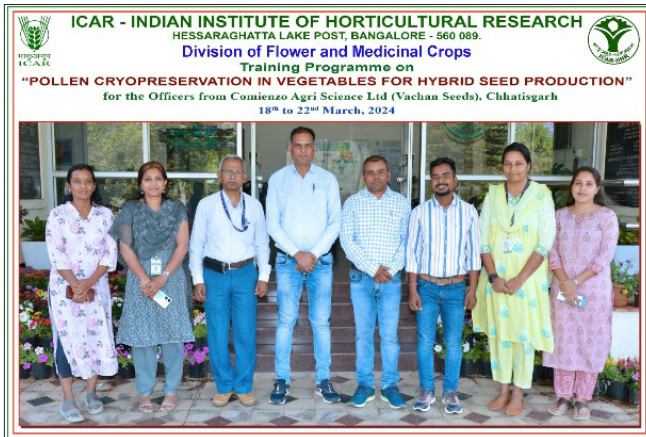
Training on Hydroponics and Vertical Farming on 13.02.2024



Workshop on Hi-tech Farming Techniques was jointly organized on 06.03.2024



Farmers training at Nelluru village, Devanahalli Taluk in association with Department of Horticulture, GoK on 23.02.2024



Training for the Extension Officers of Kerala (Batch I) from 16-18 January 2024



Training for the Extension Officers of Kerala- Batch II from 23-25 January 2024



Training for the Extension Officers of Kerala- Batch III from 5-7 June 2024



Inter-State exposure visits to Kerala farmers at ICAR-IIHR, Bengaluru



EDP on quality vegetable seedling production held on 27.06.2024



Awareness class regarding the Agri business Incubation, Startup Eco system and its activities to students of Acharya Bengaluru B-School



Workshop cum Capacity building programme on Improved vegetable production technologies for the tribal farmers of Tamil Nadu under TNTSP from June 27 -28, 2024



Training Programme for farmers of Jharkhand state from 12th to 17th Feb 2024

NEH training activities

Capacity building program on ICAR-IIHR technologies and input distribution was organized to Jowai farmers, held on 25th



May 2024 at Deen Dayal Upadhyay Community College for Skill Development, NEHU, Wahajer, West Jaintia Hills, Jowai, Meghalaya . About 200 farmers were participated the program. Dr.Prakash Patil, Director, ICAR-IIHR has attended the function as guest of honour and stressed the benefits of using resistant varieties / hybrids in vegetable crops to reduce inputs costs and encouraged farmers to fully utilize the distributed inputs. Dr.Sanjay Kumar Singh, DDG (Hort.), ICAR, New Delhi has attended the function as chief guest and emphasized the importance of chemical free farming and motivated farmers to adapt organic technologies.



Off-Campus Trainings

Hon'ble Secretary (DARE) & Director General (ICAR) distributed the inputs to tribal farmers of West Bengal as part of TSP of ICAR-IIHR in Farmers Meet

Hon'ble Secretary (DARE) & Director General (ICAR), New Delhi **Dr. Himanshu Pathak** distributed the input kits developed by ICAR-IIHR to tribal farmers of Puruliadist in West Bengal on 21.01.2024. The inputs such as vegetable seeds, Arka vegetable special micro nutrients and Arka microbial consortium to the different beneficiaries of TSP in the presence of Dr. S.K. Singh, DDG (Hort Science), ICAR, New Delhi during the Farmers Meet on Encouraging Innovation to Adopt Climate Resilient Agriculture at KVK, Kalyan, Purlia District, West Bengal.



Organized by	Date	No. of participants
ICAR-IIHR, Bengaluru		
‘Improved Production Technologies for Horticultural Crops in Idukki District of Kerala’ under Tribal Sub Plan (TSP) Scheme ICAR- IIHR Bengaluru at ICAR-Krishi Vigyan Kendra, Idukki District	04.01.2024	102
Training programme on ICAR-IIHR technologies to the tribal farmers of West Bengal, Purulia District KVK,Purulia, West Bengal (TSP)	21.01.2024	200
Health camp and input distribution for scientific rearing of sheep and goat at Hosadurga village of Kanakapura taluk, Ramanagara district (Farmer FIRST Project, in Collaboration with NDRI & NIANP)	20.02.2024	80
Training programme at Nelluru village, Devanahalli Taluk	23.02.2024	35

Training programme on ICAR-IIHR technologies for the tribal farmers of BR hills of Chararajanagar district of Karnataka BR Hills Chamrajnagara (TSP)	26.02.2024	69
Training on ICAR-IIHR technologies for tribal farmers of Masinakudi Nilgiris District of Tamil Nadu Masinakudi, Nilgiris (TSP)	21.03.2024	88
Good dairy management practices and value addition at NDRI, Bengaluru	21.03.2024	35
Training on ICAR-IIHR technologies for tribal farmers of lower pulney hills of Dindigul district of Tamil Nadu Thandikudi, Lower pulney Hills (TSP)	28.03.2024	65
Training on ICAR-IIHR technologies for the tribal farmers of Dakshina Kannada district of Tamil Nadu Puttur DK District (TSP)	21.06.2024	80
Training programme on “New Varieties and Improved Technologies of ICAR-IIHR and Distribution of Inputs” under SCSP programme at Jamboni block, Jhargram district, West Bengal	28.06.2024	100
CHES, Chettalli		
Scientific Cultivation of Avocado at Harapanahalli and Kudligi taluks of Vijayanagara district	20.05.2024- 21.05.2024	60
CHES, Bhubaneswar		
Skill training programme on development of model nursery in horticultural crops in Mayurbhanj dist of Odisha	29.02.2024- 04.03. 2024	18
Skill training programme on development of model nursery in horticultural crops in Jharsuguda dist of Odisha	11.03.2024- 15.03.2024	18
Awareness cum training programme on basic virtue of rooftop gardening	11-01-2024	25
	15-01-2024	110
	08-02-2024	72
	10-02-2024	26
	18-02-2024	17



Training Programme at Idukki, Kerala under TSP scheme on 04.01.2024



Farmers training at ICAR-NDRI under Farmer FIRST Project



Farmers training under SCSP programme at Jamboni block, Jhargram district, West Bengal on 28.06.2024

Front-Line Demonstrations

Topic	No. of FLDs organized
Composting of farm residues Cherupuzha, Kasaragod, Kerala	2
Arka Nutri Garden for augmenting mid-day meal programme Government School of Haralahalli, Chikakadaluru and Dudda of Hassan district, Karnataka	3

Exhibitions

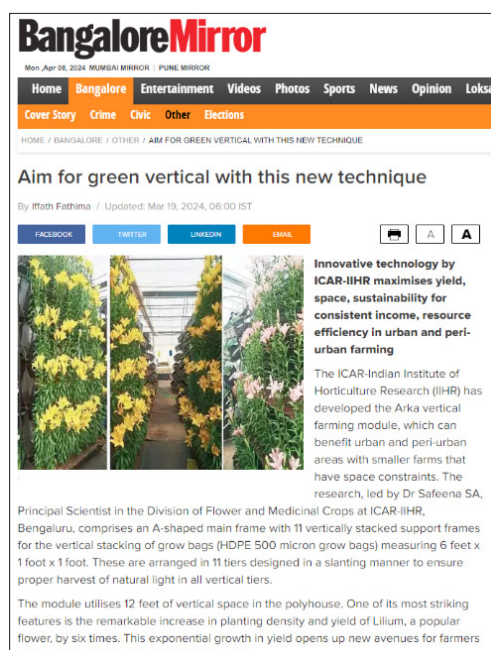
Event and Location	Venue and date
Exhibition of papaya and passion fruit genotypes	CHES, Chettalli on 17.01.2024
Demonstration of Flower waste utilization technology	Republic Day flower show, Lalbagh during 16.01.2024 to 26.01.2024
Exhibited stall at GKVK, Exhibition, UAS Bengaluru	UAS Bengaluru, GKVK Campus on 12.03.2024
Exhibition of avocado fruit genotypes in “Field Day cum Diversity Fair on Avocado”	CHES, Chettalli on 15.06.2024
CHES, Bhubaneswar	
Krushi Odisha 2024 with a theme “Celebrating Women”	Janata Maidan, Bhubaneswar 12.01.2024 to 14.01.2024
Agrivision 2024	ICAR-National Rice Research Institute, Cuttack on 19.01.2024 to 20.01.2024
National Horticulture Fair 2024	ICAR-IIHR, Bengaluru, 05.02.2024-07.02.2024
Foundation day of ICAR-CIWA	Bhubaneswar on 17.02.2024
National Seminar on Climate Smart Agriculture	OUAT, Bhubaneswar on 03.03.2024
OUAT, Bhubaneswar	

SoA-Agri-Confluence (SAC)-2024	Siksha-O-Anusandhan, Bhubaneswar on 12.03.2024-14.03.2024
Foundation day ICAR-IIWR	Bhubaneswar on 12.03.2024
Aam Mahotsav 3.0	NABARD Regional office, Nayapalli, Bhubaneswar 10.06.2024-12.06.2024

Media Coverage (Radio, TV programs, Newspaper articles etc.)

Name of Scientist	Radio talk topic	Broadcasting date
Dr. Muralidhara, B.M.	Radio talks on “Cultivation of Off-season Litchi” and “Cultivation of Rambutan” Akashavani, Madikeri.	04.01.2024 and 11.01.2024
Dr. Nayan Deepak G.	Radio talk on ‘Cultivation Practices for Passion Fruit’ in the Raithadwani Kissanvani programme Akashavani, Madikeri	21.03.2024
Dr. Rani A.T.	Radio talks on “Management of Insect Pests of Litchi Fruit Crop” and “Management of Insect Pests of Teasel Gourd” in the Raithadwani Kissanvani programme	23.05.2024 and 30.05.2024
Dr G C Acharya	Discussion programme on “Water management in fruit and vegetable crops” at AIR, PURI for Kisan Vani programme	15.02.2024

Newspaper article: “Aim for green vertical with this new technique”. Published in *Bengaluru Mirror* by The Times Group on 19th March 2024 Safeena S.A., 2024. Arka Vertical Farming Module. *Augmented Reality Postcards.*



BangaloreMirror
Mon, Apr 08, 2024 HUMBALI MIRROR | PUNE MIRROR

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HOME / BANGALORE / OTHER / AIM FOR GREEN VERTICAL WITH THIS NEW TECHNIQUE

Aim for green vertical with this new technique

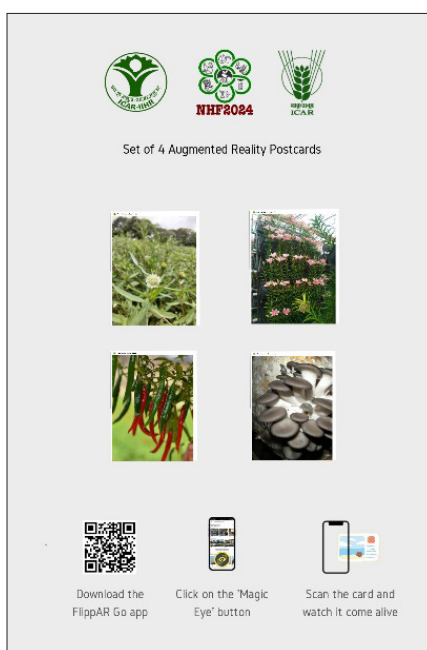
By Ifath Fathima / Updated: Mar 19, 2024, 06:00 IST

FACEBOOK TWITTER LINKEDIN EMAIL

Innovative technology by ICAR-IIHR maximises yield, space, sustainability for consistent income, resource efficiency in urban and peri-urban farming

The ICAR-Indian Institute of Horticulture Research (IIHR) has developed the Arka vertical farming module, which can benefit urban and peri-urban areas with smaller farms that have space constraints. The research, led by Dr Safeena SA, Principal Scientist in the Division of Flower and Medicinal Crops at ICAR-IIHR, Bengaluru, comprises an A-shaped main frame with 11 vertically stacked support frames for the vertical stacking of grow bags (HDPE 500 micron grow bags) measuring 6 feet x 1 foot x 1 foot. These are arranged in 11 tiers designed in a slanting manner to ensure proper harvest of natural light in all vertical tiers.

The module utilises 12 feet of vertical space in the polyhouse. One of its most striking features is the remarkable increase in planting density and yield of Lillium, a popular flower, by six times. This exponential growth in yield opens up new avenues for farmers to maximise their profits within limited space.



Set of 4 Augmented Reality Postcards

Download the FlipAR Go app

Click on the 'Magic Eye' button

Scan the card and watch it come alive



Scan to reveal augmented reality content

PTC for instructions

Arka Vertical Farming Module

ಬೆಂಗಳೂರು ಐಐಐಆರ್ ಬೆಳೆಗಳ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ಶಂಕರನ ಸಲಹೆ ಹೊಸ ತಳಿಯ ಹಣ್ಣಿಗೆ ಪೇಟೆಂಟ್ ಪಡೆಯಲು ಕ್ರಮಕೈಗೊಳ್ಳಿ

■ ದಿವ್ಯವಾಣಿ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಕಟವಾದ ಲೇಖನ

ಬೆಂಗಳೂರು ವಿಜಯವಾಣಿ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಕಟವಾದ ಲೇಖನವು, ಮುಖ್ಯವಾಗಿ ಐಐಐಆರ್ ಬೆಳೆಗಳ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ಶಂಕರನ ಸಲಹೆ ಹೊಸ ತಳಿಯ ಹಣ್ಣಿಗೆ ಪೇಟೆಂಟ್ ಪಡೆಯಲು ಕ್ರಮಕೈಗೊಳ್ಳಿ ಎಂಬುದಾಗಿ ಕೇಳಿಕೊಂಡಿದೆ. ಡಾ. ಶಂಕರನ ಸಲಹೆ ಹೊಸ ತಳಿಯ ಹಣ್ಣಿಗೆ ಪೇಟೆಂಟ್ ಪಡೆಯಲು ಕ್ರಮಕೈಗೊಳ್ಳಿ ಎಂಬುದಾಗಿ ಕೇಳಿಕೊಂಡಿದೆ.

ಐಐಐಆರ್ ಬೆಳೆಗಳ ವಿಭಾಗದ ಮುಖ್ಯಸ್ಥ ಡಾ. ಶಂಕರನ ಸಲಹೆ ಹೊಸ ತಳಿಯ ಹಣ್ಣಿಗೆ ಪೇಟೆಂಟ್ ಪಡೆಯಲು ಕ್ರಮಕೈಗೊಳ್ಳಿ ಎಂಬುದಾಗಿ ಕೇಳಿಕೊಂಡಿದೆ. ಡಾ. ಶಂಕರನ ಸಲಹೆ ಹೊಸ ತಳಿಯ ಹಣ್ಣಿಗೆ ಪೇಟೆಂಟ್ ಪಡೆಯಲು ಕ್ರಮಕೈಗೊಳ್ಳಿ ಎಂಬುದಾಗಿ ಕೇಳಿಕೊಂಡಿದೆ.

ಕನ್ನಡಪ್ರಭಾ

ಫ್ಯಾಷನ್ ಫ್ರೂಟ್, ಪಪಾಯಿ ವಾರ್ಡ್ಸ್ ಕೃಷಿ ಲಾಭ ಪಟ್ಟಿಯಲ್ಲಿ ನವೆಂಬರ್ 2023

ಕನ್ನಡಪ್ರಭಾ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಕಟವಾದ ಲೇಖನವು, ಫ್ಯಾಷನ್ ಫ್ರೂಟ್ ಮತ್ತು ಪಪಾಯಿ ವಾರ್ಡ್ಸ್ ಕೃಷಿ ಲಾಭ ಪಟ್ಟಿಯಲ್ಲಿ ನವೆಂಬರ್ 2023 ರ ಬಗ್ಗೆ ಮಾಹಿತಿ ನೀಡಿದೆ.

ಪೆಪ್ಪಲಿಯು ತೋಟಗಾರಿಕಾ ಪ್ರಾಯೋಗಿಕ ಕೇಂದ್ರದಲ್ಲಿ ನವೆಂಬರ್ 2023ರಲ್ಲಿ ಪ್ರದರ್ಶನ ಪ್ರಾಯೋಜನ ಪೂರೈಕೆಗೆ ಮನಸೂತು ಗ್ರಾಹಕರು

ಪೆಪ್ಪಲಿಯು ತೋಟಗಾರಿಕಾ ಪ್ರಾಯೋಗಿಕ ಕೇಂದ್ರದಲ್ಲಿ ನವೆಂಬರ್ 2023ರಲ್ಲಿ ಪ್ರದರ್ಶನ ಪ್ರಾಯೋಜನ ಪೂರೈಕೆಗೆ ಮನಸೂತು ಗ್ರಾಹಕರು ಎಂಬುದಾಗಿ ಕೇಳಿಕೊಂಡಿದೆ.

News paper clippings published on 18th January, 2024 in Vijayavani, Kannada Prabha, and Vijayavani showing information of “Brainstorming & Fruit Diversity Show on Papaya and Passion Fruit” held at CHES, Chettalli on 17th January, 2024.

Field Days/ Success stories

Field day on Arka Elakki Banana Suspension culture technology

Field day on Arka Elakki Banana (ECS) technology was organised on 18.01.2023 at Chimakalahalli village, Gauribidanur Taluk, Chikkaballapur District. Dr.Usha Rani, Dr. Chandrashekhar, N., Dr. G. Chetan Kumar, Mr.Atheequlla G.A, Dr Bala Krishna and the staff of Biotechnology participated as resource team. About 60 farmers from surrounding villages participated in the field day.

problems in cultivation of avocado. The guests were: Prof. S. K. Singh, Deputy Director General (Horticultural Sciences), ICAR, New Delhi; Shri. K.N. Verma, Director, MIDH, GoI; Shri Bose Mandanna, Former Vice Chairman, Coffee Board and Planter, Suntikoppa; and Dr. Prakash Patil, Project Coordinator, ICAR-AICRP on Fruits. More than 100 diverse avocado genotypes and 30 different avocado recipes were displayed. The extension leaflet on “Avocado Cultivation: The Key Points” was released. More than 300 farmers from Karnataka, Kerala and Tamil Nadu participated in the programme.



Field performance of somatic embryo derived Elakki bale in Chinnhalli village of Gouribidanur Dist

Field Day cum Diversity Fair on Avocado at ICAR-IIHR-Central Horticultural Experiment Station, Chettalli on 15th June, 2024

The main aim of the programme was to showcase the genetic diversity in avocado and to address the



Agricultural Technology Information Centre (ATIC): During January to Jun 2023, about 1893 farmers visited ATIC. About 1331 telephone queries were answered.

8. Awards and Recognitions

A. Awards

Awards received during National Conference on Recent Trends and Future Prospects of Floriculture in India” organized by ICAR - Indian Institute of Horticultural Research, 9-11 January, 2024, at Bengaluru

1. Sangeetha Priya S., Aswath, C., Safeena, S.A., Sujatha A. Nair and Kalaivanan, D. received best oral presentation award for the paper entitled 'Response of gerbera var. Arka Nesara to orientation of vertical structures in different directions'.
2. Umamaheswari, R., Tejaswini Prakash, K. Hima Bindu, Pritee Singh, D. Kalaivanan and T. K. Radha received best oral presentation award for the paper entitled 'Evaluation of marigold for its nematocidal properties and as rotational crop for nematode management'.
3. Sushmita Javalagaddi, Smitha G.R., Arivalagan M., Seetharamu G.K., Sujatha A. Nair, Kalaivanan D. and Manjunath Ramanna received best oral presentation award for the paper entitled 'Extraction of anthocyanin and polyphenolic antioxidants from waste rose petals and assessing their storage stability'.
4. Sangeetha Priya S., Aswath C., Safeena, S.A., Sujatha A. Nair and Kalaivanan, D. received best poster presentation award for the paper entitled 'Standardization of nutrient solution for gerbera var. Arka Nesara grown on soil-less wick system'
5. Sushmita Javalagaddi, Smitha G.R., Seetharamu G.K., Kalaivanan D., Sujatha A. Nair, Arivalagan M. and Manjunath Ramanna received best poster presentation award for the paper entitled 'Composting of flower waste: Sustainable approach for solid waste management'.
6. Safeena S.A., Aswath C., Senthil Kumaran G., Shilpa Shree K.G., D. Kalaivanan and M.L. Chaithra received best oral presentation award for the paper entitled 'Vertical farming: A case study on its feasibility for commercial cultivation of *Limonium sinuatum* (L). Mill.
7. S.Bhuvaneswari, G.R.Smitha and Sujatha Nair got BEST ORAL Presentation Award for the

research paper "Floral Blocks- An eco-friendly product from floral waste".

8. Dr. Reena Rosy Thomas received best poster presentation award for the paper entitled "A comprehensive web based system for Flower Crops cultivation".

International Conference on "Emerging Postharvest Technologies for Shelf life Enhancement and Valorization of Horticultural Crops" (ICPHTV'24) from 4-5 January 2024 at TNAU, Coimbatore

1. Dr. D.V. Sudhakar Rao, Principal Scientist, Division of PHT & AE is the co-recipient of best poster award for "Antagonistic effect of antimicrobial volatile organic compounds in extending the storage life of papaya fruits"
2. Dr. Vijay Rakesh Reddy S, has received Best Scientist Award from Society for Promotion of Horticulture and Technology (SoPHoST)
3. Best oral presentation for the paper "Development of fibre enriched avocado powder using cabinet dryer – a profitable venture" by Sameela, C., **Preethi, P.**, S.V.R. Reddy, Shamina Azeez, G. Karunakaran, B.M. Muralidhara
4. Dr. Preethi, P has received Best oral presentation for title "Neoteric approaches to reduce storage browning in avocado pulp and cubes" by **Preethi, P.**, S.V.R. Reddy, Shamina Azeez,
5. G. Karunakaran and B.M. Muralidhar in 3rd Indian Horticulture Summit cum International Conference organized by SHRD, UP and RARI, Jaipur, Rajasthan from 1-3 Feb, 2024
6. Dr. Muralidhara, B.M. Scientist (Fruit Science) received Young Horticultural Scientist Award from Society for Horticultural Research and Development on 01 February 2024.

7. Dr. Muralidhara, B.M. received DCR-Best Research Paper Award for the year 2024 for the article “Evaluation of fruit detachment forces and related characteristics reveals differential fruit detachments at developmental stages and cultivar differences in cashew” published in *Scientia Horticulturae*, 331, 113128.

B. Recognition

- Dr. G C Acharya delivered an invited lecture on Horticulture-based entrepreneurship through technology interventions for high value vegetable crops. In training program on "Gender-Sensitive Agri-Horti based Dimensions for addressing Livelihood, Nutrition, and Entrepreneurship," held between 15-19 January, 2024 by ICAR-CIFA & MANAGE
- Dr. T.R. Rupa, delivered a guest lecture on the topic "Soil Changes following Long term Conservation Horticultural practices" on 07th February, 2024 at TNAU, Coimbatore.
- Dr. R. B. Tiwari delivered an invited lecture on 'Sustainable Technological Approaches for Management of Horticultural Produce' on 09.02.2024 during short course on “Sustainable Horticultural Waste Management: industrial and Environmental perspective” held from 05.02.2024 to 14.02.2024 at UHS, Bagalkot.
- Dr. R. B. Tiwari Delivered two lectures (a) Handling and storage – sustainable management of horticulture produce ,(b) Processing and value addition – focus on crops important for Jammu & Kashmir on 14.02.2024 during training program on Agricultural Marketing and Post-Harvest Management’ organized by MANAGE, Hyderabad.
- Dr. T.R. Rupa, delivered a guest lecture on the topic "Soil health for Sustainable Horticulture" on 20th February, 2024 at Sri M Visvesvaraya Institute of Technology, Bengaluru.
- Dr G C Acharya acted as a resource person for the session on “Flourishing in a changing climate: Horticultural Approaches to Mitigation” during a refresher training course organized by Dean of Extension Education, OUAT on 07.03.2024
- Dr G C Acharya acted as a chairman of Panel Discussion in the session “Sustainable production system: Farming, Livestock and Fishery” on 12/03/2024 at Faculty of Agril. Sciences, SoA Deemed to be University
- Dr. R.B. Tiwari acted as an External Subject Matter Specialist during Annual Technical Meet (ATM) on Post Harvest Management Division 2023-24 held at COH, Mysuru from 14th to 15th March,2024.
- Dr. R. B. Tiwari., Principal Scientist and Head (l/c), Division of Post Harvest Technology and Agricultural Engineering, to participate in the "FAD 10 committee meeting", held at BIS Head Quarter, New Delhi, on 20th March, 2024.
- Dr. T.R. Rupa, participated in the meeting to discuss on “Voluntary Carbon Market (VCM) in agriculture and formulate appropriate strategies of the Council for facilitating implementation of VCM in agriculture sector in the country” through online organized by ICAR-CRIDA, Hyderabad on 12th April 2024.
- Dr G C Acharya was the Chief Guest for the plenary session of Research and Extension Monitoring Cell meeting of Faculty of Agric. Sciences, SoA deemed to be university on 15.04.2024
- Dr. R. B. Tiwari participated in 29th Meeting

- of Food and Agriculture Division Council, FADC at Manak Bhawan, Bureau of Indian Standards, New Delhi on 27.05.2024
- Dr. T.R. Rupa, delivered a invited talk on “Land restoration, Desertification, and Drought Resilience” on the occasion of World Environment Day on 5th June, 2024 at Vivekananda Vidyavardhaka High School, Hesaraghatta, Bengaluru
 - Dr. T.R. Rupa, participated and presented a proposed technology on "Use of leachate produced through composting as liquid manure" through online during 8th meeting of standing committee constituted for evaluation of technology for waste management organized by Central Pollution Control Board, New Delhi on 10th June, 2024.
 - Dr R.B. Tiwari-Convener of working group to modify the scope of FAD 10 - Fruits, Vegetables and Allied Products Sectional Committee.
 - Dr. R. B. Tiwari Delivered two lectures during training programme on 'Nutrition Sensitive Agriculture for Addressing Global Malnutrition " to be held at MANAGE, Hyderabad on 11th March 2024, without any financial commitment on the part of ICAR-IIHR, Bengaluru.
 - Dr. Karunakaran G was nominated as Nodal officer for implementation of the Clean Plant Programme under ADB
 - Dr. Karunakaran G served as Chairman for Assessment and Accreditation of Horticulture Nurseries of Assam
 - Dr Satyapriya Singh, Scientist-Conferred with Ph.D. degree award in 62nd convocation ceremony of ICAR-IARI, New Delhi on 9th June, 2024
 - Dr G C Acharya, nominated as a member of committee to finalize standard operating Procedure for minimum seed certification standards for ,Tissue culture Based seed potato Production" using ARC technology under Department of Agriculture and Farmers' Empowerment, Govt of Odisha
 - Dr G C Acharya attended Scientific Advisory Committee Meeting of KVK Jajpur, Dhenkanal, Sambalpur, Ganjam, Sonepur, Keonjhar as a member of SAC
 - Dr. G C Acharya nominated as a member of the technical expert committee for source verification of different planting materials for Kharif-2024 for Directorate of Horticulture, Govt of Odisha

Invited/ Lead Talks in Conferences/ Symposia/ Winter School

- Dr. Safeena S.A served as Key Note speaker on "Doubling farmers' income through floriculture interventions" on 9th January, 2024, during National Conference on "Recent Trends and Future Prospects of Floriculture in India, held at IIHR, Bengaluru, 9-11 January, 2024
- Dr. M.D. Prathibha delivered a lecture on “Chlorophyll fluorescence and its application in plant phenotyping at 21 day Winter school training program on Phenotyping Horticultural Crops for Abiotic Stress Tolerance to Enhance Resilience under Climate Change conducted at ICAR-IIHR from 01-21 February, 2024.
- Dr. Shamina A delivered lecture on ‘Heat shock proteins and abiotic stress’, for the ICAR sponsored Winter School on ‘Phenotyping Horticultural Crops for Abiotic Stress Tolerance to Enhance Resilience Under Climate Change’ conducted at ICAR-IIHR from 01-21 Feb, 2024.

9. Patents & Commercialization of Technologies

Patents

IPRs	Application/Registration No.	Name of Innovation/Technology/ Product/Variety	Date of Filing/Registration	Application Granted/Registered**	Scientist concerned
Patent	201941033416	Suction Trap for Insects	19.8.2019	Patent No: 523430 Date of grant : 11/03/2024	Dr. V. Sridhar
Patent	201841022601	Iron Fortified Mushroom and Process of producing thereof	16.6.2018	Patent no. 506921 Date of grant 05.2.2024	Dr. Meera Pandey

Commercialization of Technologies

Licensee details	Technology licensed	Date of MoU exchange
M/s. Sudharshan Floritech, Varagoor Villiage Pulikarai Post Palacode Taluk Dharmapuri District-636808 Tamilnadu Mr. Siddharthan M., Proprietor Mobile No : 955937995 Email: siddharthanm@gmail.com	Tuberose variety, Arka Keerthana	09.1.2024
M/s. Progrorich Farms Pvt. Ltd., No. 12, Sri Vishnu Nilaya, Anjenappa layout, Doddabommasandra, Bengaluru-560097, India.: Dr. Babita K C., : babithacph@gmail.com, : +91-9319478497	Arka Microbial Consortium (Solid + liquid)	10.1.2024
M/s. Ashoka Farm Aids No. 11, 2nd Main, 2nd Division Goraguntepalya, Yeshwanthpura Bengaluru, Karnataka-560022. India Attn : Mr. J A Earanna, MD, E-mail : earanna@gmail.com; Mob : +91-93419 56265; +91-9341956265	Chilli 'IHR 4390 & IHR 4391'; 'IHR 4392 & IHR 4393' and 'IHR 4615'	10.1.2024
M/s. The Karnataka State Lamps Co-operative Federation Ltd. Sr. Manjunath R., Managing Director, Mysore-570016 Phone: 9916155740, Email: kslcftf@gmail.com Paid by-The Secretary Karnataka State Council for Science & Technology, Indian Institute of Science Campus, Telephone: 080 23341652. finance@kscst.org.in	Amla Squash	29.1.2024

M/s. Krupashreya, 20/79, 11th Cross, 6th Main, Nagapura, M. L. Puram, Bengaluru-560086. Phone: 9513153792, Email: help.krupashreya@gmail.com, Mr. Shreyas K., Managing Director	Arka Fresh cut fruit (Jackfruit)	29.1.2024
M/s. Protein Bites Organic Mushroom Farm, 2329/90, Nava Ayodya Nagar, 2nd Cross, Behind Maruti Temple, Old Hubli, Hubli, Karnataka-580024 Phone: 7975882995, Email: krishna.gajakosh@gmail.com, Mr. Krishna Gajakosh, Proprietor	Arka mushroom Nutri-Cereal cookies (all 5types)	29.1.2024
Mr. Dinesh Kumar J.29/8,U/ Block,10th street, Vaishnavi Apartment , Anna Nagar, Chennai-600400 E-mail: jdineshkumar9798@gmail.com Mobil :9962290798	Arka Minimally Processed Onion	29.1.2024
M/s. Capsber Global Agro Private Limited, SW51,#4, DITP, 1st lane, Apparel park, Doddaballapur Rd, Doddaballapur Industrial Area, Bengaluru – 561 203, Karnataka, MANOJ KUMAR R FOUNDER & MANAGING DIRECTOR, MOBILE & WHATSAPP: +91 97423 25266, manoj@capsber.com www.capsber.com<http://www.capsber.com>	Arka Microbial Consortium (Solid + liquid) and Arka Banana Special	19.2.2024
M/s. AIRR Organics and Biofertilizers Private Limited A205, Parimala Trinity Apartments, Boganahalli Road, Panathur, Bengaluru- 560103 Email:anilkumar.varnam@gmail.com Dr. Ruchi Sahu (Contact no: 9886165014) Dr. Anil Kumar M (Contact no: 9986731971)	Arka Banana Special	19.2.2024
M/s. AG ORGANICZ, #51/5, 2nd cross, Bikasipura Main Road, Yelachenahalli, JC Industrial Area, Bengaluru-560062, Mr. Prashanth D.S Managing Partner9986708122, Email: info@agopl.com	Arka Sasya Poshak Ras	28.2.2024
Mr. Ramesh S. Ponnathmotte, Chettalli Post, Kodagu (Dt.), Karnataka-571248. Phone: 9449926759, Email: s3551751@gmail.com	Arka Supreme Avocado variety	05.3.2024
M/s. ICAR-Krishi Vigyan Kendra, Hirehalli, Tumakuru, Dr. N. Loganandhan, Principal Scientist and Head. Email: kvk.tumakuru2@icar.gov.in, iihrkvk@gmail.com Phone: 8277252099	Arka Floral Agarbathi and Dhoop	05.03.2024
ICAR-KVK, Hirehalli	Arka Floral Agarbathi and Dhoop	05.03.2024
Varsha Foods and Beverages, 2nd Main, 5th Ward, Behind Rajappa Mutt, Kanakanapalya, Kolar - 563102. Mr.Somashekara KRProprietor Phone: 9740826339, Email: shekar.krs@gmail.com	Arka Kamalam Dragon fruit RTS beverage	15.03.2024

M/s. Coromandel International Ltd. Coromandel house, 1-2-10, Sardar Patel Road, Secunderabad, Telangana500003, India: Mr. Srinivasan:+91960126 1648,+919441804911leodanielamalraj@coromandel.murugappa.com	<i>Trichoderma viride</i> -1.5% W.P.	25.03.2024
M/s. Ricaa Lifesciences, 55 Rathinasamy Nadar Road, Bi Bi Kulam, Madurai, Tamilnadu-625002, India : Mr. Kaarthik K S : kskarthik1971@gmail.com : +91-82483 16960	Arka Neem Soap	26.03.2024
M/s:Agroxa Bio Innovations LLP,A1/92 Siddharth Bungalows, Nr Rhythm Hospital, Amitnagar Sama- Savli Rd, Vadodara, Gujarat – 390022 Mr. Jeet Patel :jeet@agroxa.in : +91-9016556932	<i>T. harzianum</i> 1% W.P”, <i>T. viride</i> -1.5% W.P, <i>P. fluorescens</i> -1% W.P. <i>P. chlamydosporia</i> -1% W.P)	15.04.2024
M/s. Sujay Biotech Pvt. Ltd.,Plot No. 19 A, 3rd Road, Phase III, Jawahar Autonagar, Vijayawada, A.P.- 520 007. Dr. Mekala Lakshmi Prasad: sujaybiotech@gmail.com : +91 8008661555, +91 9948489333	<i>P. chlamydosporia</i> -1 % W.P	17.04.2024
M/s. Sree Anjaneyaswami Sendriya Vyavasaya Raithu Utpathidarula Paraspara Sahayaka Sahakara Sangamu Ltd.Main Road, Lakshmampalli Village, Settur Mandal, Ananthapuramu Dt. A.P.-515 767 Mrs. Harijana Mahadevi, veerabhadreddy@accionfraterna.org +91-9347678930; +91-9848055309	Arka Neem Soap	22.04.2024
M/s. LARA, #45/5, Ganapathi Nilaya, 1st Main Road, Nanjappa Layout Adugodi, Bengaluru-560030 Ms. Latha N., Proprietor, Phone: 8618661400 latha30appi13@gmail.com	Arka Agarbathi and Dhooop	06.05.2024
M/s. Bhoomi Bioindustries, 70/71Arkavathi Layout, 19 th Block, Chelkere main Road, Bengaluru-560043, India: Manager: +91988075504bhoomibioindustries@gmail.com	Arka Mango Special”	06.05.2024
M/s. Bhoomi Bioindustries, 70/71Arkavathi Layout, 19 th Block, Chelkere main Road, Bengaluru-560043, India: Manager, +91988075504bhoomibioindustries@gmail.com	“ <i>T. harzianum</i> -1% W.P	06.05.2024
M/s. Bhoomi Bioindustries, 70/71 Arkavathi Layout, 19 th Block, Chelkere main Road, Bengaluru-560043, Manager :+91988075504 bhoomibioindustries@gmail.com	<i>P. fluorescens</i> -1% W.P	14.05.2024

M/s. Pixelin Sciences Pvt. Ltd., 2nd floor, Easy town, Tripura landmark2, Bowrampet, Quthbullapur, Medchal, Hyderabad, Telangana-500043 pixelinsciences@gmail.com; Mr. Yellanki Lakshmi Pradeep, Mobile :8143695060, Mr. Basanth Nadella Mobile : +919640595789	Arka Sasya Poshak Ras	22.05.2024
M/s. TMJ Foods India Pvt. Ltd., Kudapuram Road, Eramalloor, Alleppey, Kerala-688537 Mobile: 9895395021,8089410299 Email: coonfresh124@gmail.com Mr. T. J. Thankachan, Director	Arka vitamin D enrichment Technology in elm oyster mushroom	22.05.2024
M/s. MOBERRY, Manikuni House, Sulthan Bathery Kerala- 673592, Mr. Jamher M J. , (Proprieter), Phone: 9895277825, jamherjamal@gmail.com	Raw Mango slice preservation in Brine Technology	22.5.2024
M/s. Pixelin Sciences Pvt. Ltd., 2nd floor, Easy town, Tripura landmark2, Bowrampet, Quthbullapur, Medchal, Hyderabad, Telangana-500043 pixelinsciences@gmail.com; Mr. Yellanki Lakshmi Pradeep, Mobile :8143695060, Mr. Basanth Nadella Mobile : +919640595789	Arka Neem Soap	27.5.2024
M/s. Pixelin Sciences Pvt. Ltd., 2nd floor, Easy town, Tripura landmark2, Bowrampet, Quthbullapur, Medchal, Hyderabad, Telangana-500043 Email: pixelinsciences@gmail.com; Mr. Yellanki Lakshmi Pradeep, Mobile :8143695060, Mr. Basanth Nadella Mobile : +919640595789	Arka Pogamia Soap	27.5.2024
M/s. TealAgro, No. 5, 3rd Main, BSV Reddy Layout, Ramamurthy Nagar, Bengaluru-560016; Ms. Gayathri K., Managing Partner, Mobile: +91-7981702926, +91-9487794577, gayathri@tealagro.com	Arka Vertical Garden Model	31.5.2024
M/s. Coromandel International Ltd. Coromandel house, 1-2-10, Sardar Patel Road, Secunderabad, Telangana-500003, India: Mr. Srinivasan, : +91 9601261648,+91 9441804911 leodanielamalraj@coromandel.murugappa.com	<i>Pseudomonas fluorescens-1% W.P</i>	10.6.2024
M/s. College of Horticulture, Mandsaur, MP-458002, : Dean, Email: : kushwahhort@gmail.com, Phone: : +91-8989910003; +91- 9425129656	Arka Samrat	10.6.2024
Licensing of to M/s Vaishnavi Biotech Bengaluru	Arka Elakki bale suspension culture	
Krupashreyas, 20/79, 11 th cross, 6 th Main, Nagapura, M.L.Puram, Bengaluru- 560086	Arka Fresh-cut Fruit (Jackfruit) technology	

Mr. Dinesh Kumar, Anna Nagar, Chennai on	ARKA Minimally processed onion technology	30.01.2024
Varsha Foods and Beverages, 2nd Main, 5th Ward, Behind Rajappa Mutt, Kankanapalya, Kolar - 563102. Mr. Somashekara KR Proprietor Phone: 9740826339, Email: shekar.krs@gmail.com	Arka Kamalam RTS beverage technology	15.3.2024
M/s.Varsha Foods and Beverages, Kolar	Arka Kamalam RTS beverage technology	11.03 2024
Mr. Ramesh S. Ponnathmotte, Chettalli Post, Kodagu (Dt.), Karnataka-571248. Phone: 9449926759, Email: s3551751@gmail.com	Arka Supreme avocado variety	05.3.2024



License agreement exchange of M/s. Pixelin Sciences Pvt. Ltd. for Arka Sasya Poshak Ras technology on 22.5.2024

Memorandum of Understanding (MoU)

A Memorandum of Understanding (MoU) was signed between ICAR-Indian Institute of Horticultural Research (IIHR) and Tamil Nadu Coir Business Development Corporation (TANCOIR), Coimbatore, Tamil Nadu, a Section 8 company under the MSME Department of the Government of Tamil Nadu, for the promotion of soilless cultivation using cocopeat (cocoponics) in the state of Tamil Nadu.



10. Distinguished Visitors (Name, Designation, Date of Visit with photographs) ICAR-IIHR, Bengaluru

1. Shri Arjun Munda, Union Minister of Agriculture & Farmers Welfare and Tribal Affairs, GOI on 07.01.2024
2. Sushri Shobha Karandlaje, Union Minister of State for Agriculture and Farmers' Welfare, GOI on 07.03.2024
3. Smt. Jiksy Raphael, DGM, NABARD on 07.03.2024
4. Smt. Rohini Sindhuri, IAS, Special Secretary, Food Processing & Harvest Technology, Govt. of Karnataka, on 07.03.2024
5. Shri. Ramesh D.S. IAS, Director of Horticulture, Govt. of Karnataka, on 07.03.2024

6. Dr. Manish Das, Project Co-ordinator AICRP on Medicinal and Aromatic Plants and Betelvine and Director, ICAR-DMAPR, Anand visited ICAR-IIHR on 17.04.2024
7. Dr. V.P. Sharma, Director, ICAR-Directorate of Mushroom Research, Solan, Himachal Pradesh and PC, AICRP-Mushroom on 13.06.2024 and 14.06.2024

CHES, Bhubaneswar

1. Dr T K Behera, Director, ICAR-IIVR on 15.04.2024
2. ShriRVARoonPrasad, IRS, Addl. Commissioner of Income Tax, Chennai-09.05.2024
3. Sri Asit Triapthy (IAS)- Chairman, Western Odisha Development Council-25.06.2024

11. Revenue generation

Professional Service Functions- ITMU

During January to June 2024 around 671 professional service functions requests were processed at ITMU. The services covered under contract service (testing) majorly (up to 90%) includes phytosanitary testing (Virus, bacteria, fungus testing and insect screening) followed by DNA fingerprinting and biochemical analysis. The major consultancy work lies with field visit for pest

and disease inspection. The trainings during the period include hands-on training on tissue culture in banana, pollen cryopreservation in vegetables for hybrid seed production.



A field view of contract research (paid up trial)



A view of contract service (testing)

Division/centre	Revenue (Rs.)
Revenue generated at ATIC	87,13,875.20
RFS Nursery Fruit Crops	79,09,569.50
RFS-Flower and Medicinal Crops	28,86,843.00
RFS-Vegetable Seed	1.44 Crore
Division of PHT & AE	1,81,720.00
RFS, IIHR, Nursery-Fruit Crops	1,83,34,716.00
Nursery-Fruit Crops, Hirehalli	30,09,375.00
Division of Social Sciences and Training	11,19,800.00

Division of Natural Resources (RFS on Leaf Analysis Services, Training programmes, Irradiation of seeds and planting material using Gamma Irradiation Chamber and Contract Research -Paid up trials)	19,65,594.00
ITMU (Contract Service (Testing), Contract Research (Paid up trial), Consultancy service (Filed visit) and Training)	12,922,945.00
CHES, Chettalli (farm produce, miscellaneous and RFS)	46,74,234.00

Dr. D.V.Sudhakar Rao, Principal Scientist, Division of PHT & AE gave Technical advice on better post-harvest management in mango for half day on 14-2-2024 to M/s Qumbiz Exports, Gangondanahalli, Bengaluru with a consultancy service charges of Rs.13,098/- (Rs.11,100/- + GST 18% Rs.1,998/-) –

on Post-harvest management practices of fresh mangoes for half day on 1st March 2024 to M/s GreenOrbidFarms, Gandrajupalli, Chittor Dist, A.P. with consultancy service charges of Rs.13,098/- (Rs.11,100/-+ GST 18% Rs.1,998/-). Rs. 113,810 was generated at PHT&AE division through transfer of technologies—

Dr. D. V. Sudhakar Rao, Principal Scientist, Division of PHT & AE gave Technical advice

12. Personnel

New appointments

S. No	Name	Date w.e.f.
1	Shri Bhupendra Sagore, STO (T-6), posted at PC (Fruits), ICAR-IIHR, Bengaluru.	12.02.2024
2	Shri. Animesh Singha Ray Technical Trainee (T-1) posted at Work Unit, ICAR-IIHR, Bengaluru .	22.04.2024
3	Shri. Asmit Singh Technical Trainee (T-1) posted at Farm Management unit ICAR-IIHR, Bengaluru	25.04.2024
4	Shri. Harit Kranti Yadav Technical Trainee (T-1) posted at Div. of Crop Protection, ICAR-IIHR, Bengaluru	25.04.2024
5	Shri. Awadhesh Dher Dubey Technical Trainee (T-1) posted at PME cell, ICAR-IIHR, Bengaluru	29.04.2024
6	Shri. Vinod Kumar Technical Trainee (T-1) posted at Div. of Vegetable crops , ICAR-IIHR, Bengaluru	02.05.2024
7	Shri. Ravikant Prajapati Technical Trainee (T-1) posted at Div. of Fruit Crops, ICAR-IIHR, Bengaluru	03.05.2024
8	Shri. Ghanshyam Pandit Technical Trainee (T-1) posted at Div of Natural Resources Management, ICAR-IIHR, Bengaluru	03.05.2024
9	Shri. Sunny Kumar Technical Trainee (T-1) posted at Division of Crop Protection ICAR-IIHR, Bengaluru	06.05.2024

10	Shri. Gulshan Kumar Technical Trainee (T-1) posted at Division of Social Sciences & Training , ICAR-IIHR, Bengaluru	06.05.2024
11	Sh Saurav Kumar Technical Trainee (T-1) posted at Div. of Basic Sciences, ICAR-IIHR,Bengaluru	06.05.2024
12	Smt Arnita Majumdar Technical Trainee (T-1) posted at Div. of Basic Sciences-FSRL ICAR-IIHR,Bengaluru	06.05.2024
13	Shri. Walhekar Aniket Rajendra Technical Trainee (T-1) posted at Div. of Fruit Crops, ICAR-IIHR,Bengaluru	06.05.2024
14	Shri. Avijit Mondal Technical Trainee (T-1) posted at PG Education, ICAR-IIHR, Bengaluru	06.05.2024
15	Shri. Rajanath Kumar Technical Trainee (T-1) posted at Div of Flower & Medicinal Crops, ICAR-IIHR, Bengaluru	06.05.2024
16	Shri Ajit Kumar Technical Trainee (T-1) posted at Div of Basic Sciences, ICAR-IIHR, Bengaluru	06.05.2024
17	Ms. Kumari Dharshana Technical Trainee (T-1) posted at Div of Crop protection, ICAR-IIHR,Bengaluru	06.05.2024
18	Shri Sandeep Kumar Technical Trainee (T-1) posted Div of Fruit Crops, ICAR-IIHR, Bengaluru	06.05.2024
19	Shri Kethan Raj as Technical Trainee (T-1) posted at Division of Vegetable Crops, ICAR-IIHR, Bengaluru	06.05.2024
20	Shri Prakash Hazare Technical Trainee (T-1) posted at Div. of Vegetable crops, ICAR-IIHR,Bengaluru	10.06.2024
21	Shri Kaushik Chandra Das, Technical Trainee (T-1) posted at Div. of Crop protection, ICAR-IIHR,Bengaluru	11.06.2024
22	Shri Anurag Kumar Technical Trainee (T-1) posted at RFS(Fruits Units) , ICAR-IIHR, Bengaluru	26 .06.2024
23	Shri. Mallikarjun N.N T-1, Technician posted at Works Unit, ICAR-IIHR, Bengaluru	09.05.2024
24	Shri Ankur Sharma Technical Trainee (T-1) posted Div. of PHT & AE, ICAR-IIHR,Bengaluru	09.05.2024
25	Shri Sudhir Triathi Technical Trainee (T-1) he is posted Div. of PHT & AE, ICAR-IIHR,Bengaluru	20.05.2024
26	Shri Randheer Kumar Thakur Technical Trainee (T-1) posted Div. of Social Sciences & Training, ICAR-IIHR,Bengaluru	06.05.2024
27	Shri Kavindra Kumar Technical Trainee (T-1) posted at Div. of Basic Sciences, ICAR-IIHR,Bengaluru	06.05.2024
28	Shri. Akash Kumar Technical Trainee (T-1) posted Div. of Basic Sciences, ICAR-IIHR,Bengaluru	06.05.2024

29	Shri. Ratan Kumar Jha Technical Trainee (T-1) posted Div. of Flower and Medicinal Crops , ICAR-IIHR,Bengaluru	07.05.2024
30	Shri. Shivom Gupta Technical Trainee (T-1) posted Div. of Flower and Medicinal Crops, ICAR-IIHR,Bengaluru	08.05.2024
31	Shri. Rajnath Kumar Technical Trainee (T-1) posted Div. of Flower and Medicinal Crops, ICAR-IIHR,Bengaluru	06.05.2024
32	Shri. Ameen Ansari M D Technical Trainee (T-1) posted at ICAR-IIHR-CHES, Bhubaneswar	02.05.2024
33	Shri Amrit Kumar Technical Trainee (T-1) posted ICAR-IIHR-CHES,Chettali	06.05.2024
34	Shri Suvam Mishra Technical Trainee (T-1) posted ICAR-IIHR-CHES, Chettali	06.05.2024
35	Shri Shreenath Mishra Technical Trainee (T-1) posted ICAR-IIHR-CHES,Chettali	30.04.2024
36	Shri Bhanu Pratap Singh Pandoliya Technical Trainee (T-1) posted ICAR-IIHR-CHES, Chettali	06.05.2024

New Entrants CHES, Chettali

S. No	Name	Date
1	Mr. Shreenath Mishra, Technician (T-1)	30.04.2024
2	Mr. Suvam Mishra, Technician (T-1)	06.05.2024
3	Mr. Bhanu Pratap Singh Pandoliya, Technician (T-1)	06.05.2024
4	Mr. Amrit Kumar, Technician (T-1)	06.05.2024

Promotion of Scientific Staff

1. Dr. Safeena S.A on Direct Selection (On Recommendations of ASRB) was appointed as Principal Scientist (Floriculture and Landscaping) and joined the Institute as Principal Scientist on the forenoon of 22 February 2024 (Pay level 14)
2. Dr. R. Umamaheswari, Senior Scientist, Div of Crop Protection has been promoted to the next higher grade of Principal Scientist w.e.f. 07.01.2023 (Pay level-14)
3. Dr. Sridhar Gutham, Senior Scientist, Div of Plant Physiology has been promoted to the next higher grade of Principal Scientist (Pay level-14) w.e.f. 09.05.2021.
4. Dr. Lakshmana Reddy D.C, Senior Scientist, Div of Plant Physiology has been promoted to next higher Grade of Principal Scientist (Pay level-14) w.e.f.12.06.2022.
5. Dr. G.R. Smitha, Senior Scientist, Div of Flower & Medicinal Crops has been promoted to the next higher grade of Principal Scientist (Pay level 14) w.e.f. 08.01.2023
6. Dr. Tusar Kanti Behera , Director ICAR-IIHR Varanasi, has taken over the charge of DIRECTOR of ICAR-IHR Bengaluru w.e.f. 12.06.2024 (FN).

Promotion of Technical Staff

1. Shri. K.V. Shankara Prasad, Ex-ACTO (T-7/8) has been promoted to higher grade of CTO (T-9) Cat-III in the pay Matrix level-12 w.e.f 01.01.2022.

Promotion of Administrative Staff

1. Shri. Sachin Agnihotri, CAO has been promoted to the post of CAO(SG) w.e.f. 01.01.2024
2. Smt. Anuradha. L, JAO, promoted to the post of AFAO w.e.f. 18.01.2024.
3. Smt Shylaja Chandrashekar, Assistant, promoted to the post of AAO w.e.f. 28.03.2024.
4. Shri. K.M. Vijaya Kumar, Assistant, promoted to the post of AAO w.e.f. 01.06.2024.

Transfers

1. Dr. Sanjay Kumar Singh, Director was selected as DDG (Horticultural Sciences) at ICAR Headquarters, New Delhi and relieved from ICAR-IIHR, Bengaluru on 22.01.2024 (FN).
2. Dr. Sreenivasa. V, Senior Scientist, has been transferred from ICAR-SBI, Coimbatore to IIHR – Bengaluru and reported at ICAR-IIHR on 21.03.2024 (FN)
3. Dr. Devendrappa, Scientist has been transferred from ICAR-CICR, Nagpur to ICAR-IIHR Bengaluru and reported at ICAR-IIHR on 12.04.2024 (F.N)
4. Smt. Anuradha L, Junior Accounts Officer 12.01.2024 (CHES, Chettalli to ICAR-IIHR, Bengaluru)

C. Study Leave

Name	Date
Shri.Madhu G S, Scientist (Plant Pathology)	02.01.2024 to 01.01.2025

Superannuation Scientific Staff

1. Dr. Sreenivasa Murthy .D, Principal Scientist, retired from Council's service on superannuation on 31.03.2024 (F.N).

Superannuation Technical Staff

1. Shri. Y. Rajanna, Technical Assistant (Driver) Form Mangement, ICAR-IIHR, Bengaluru retired from Councils service w.e.f 31.03.2024
2. Shri. Nazeer Khan, Technical Assistant (Driver) Flowers Medicinal Crop, ICAR-IIHR, Bengaluru retired from Councils service w.e.f 31.03.2024
3. Shri. M.S Nataraju, Technical Officer Flowers Medicinal Crop , ICAR-IIHR, Bengaluru retired from councils service w.e.f 31.03.2024
4. Shri. P. Deenadayalan, Technician, Div of Crop Protection, ICAR-IIHR, Bengaluru relieved from Councils service on resignation (personnel ground) w.e.f 05.04.2024

Superannuation Admin And SSS Staff

1. Shri. C.M. Anjanappa, Multi Tasking Staff, ICAR-IIHR, Bengaluru retired from Council's/ IIHR service on superannuation on the AN of 29.02.2024.
2. Shri. Karapuswamy, Multi Tasking Staff, ICAR-IIHR, Bengaluru retired from Council's/ IIHR service on superannuation on the AN of 29.02.2024.
3. Shri. Kumar, Multi Tasking Staff. ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 31.03.2024.
4. Shri. K.B. Sabukuttan, Administrative Officer, ICAR-IIHR, Bengaluru retired from Council's/ IIHR service on superannuation on the AN of 30.04.2024.

5. Shri. H.T. Venkatesh Murthy, Multi Tasking Staff. ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 30.04.2024.
6. Shri. B.M. Lokesh, Asst. Administrative Officer, ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 31.05.2024.
7. Shri. Venkateshappa, Multi Tasking Staff. ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 31.05.2024.
8. Shri. T.S. Siddarajaiah, Sikked Support Staff, who was been missing is removed from the Division/Seniority list (was due for retirement on 31.05.2024).
9. Shri. T.V. Laxmaiah, Multi Tasking Staff. ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 30.06.2024.
10. Shri. Rudraiah. M, Multi Tasking Staff. ICAR-IIHR, Bengaluru retired from Council's/IIHR service on superannuation on the AN of 31.05.2024.



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Hessaraghatta Lake Post, Bengaluru- 560089

Phone:+91-80-23086100 Fax:+91-80-28466291

Email: director.iihr@icar.gov.in Website: <http://www.iihr.res.in>

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(Drs. S. Sujatha, C. Mahadevaiah, Shilpa Shree K G and Bhargavi H A).

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