



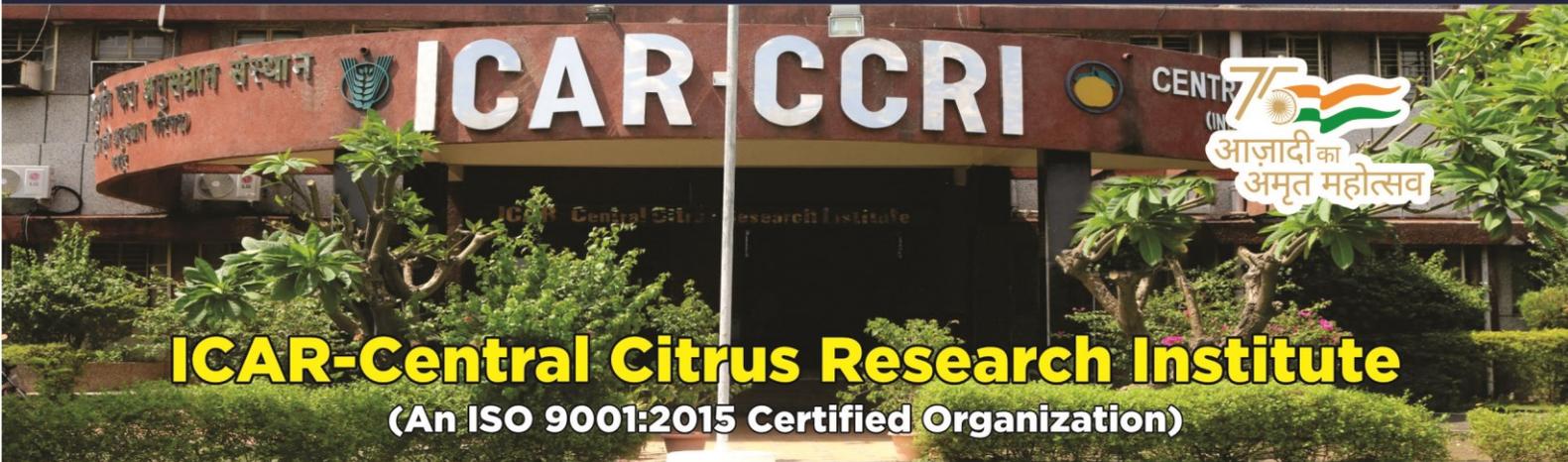
Citrus Newsletter



Vol. 28

No. 2

July to December, 2022



From the Director's Desk.....



Dear Readers,

Globally, citrus is one of the most important fruit crops. There are more than 150 countries where citrus is grown, of which 53 countries commercially cultivate citrus. India ranks third in citrus production after China and Brazil contributing about 7-8% of global citrus production. Citrus, ranks third after mango and banana in our country, are exported to different countries of the world. While there are wide range of export assistance with more free trade opening up and insurance covers for exporters, Indian citrus growers have yet to fully capitalize on the export opportunity due to numerous obstacles and vulnerabilities. A major barrier is the scarcity of export-quality fruit. Only 10-

15% of fruits grown in the country, particularly Nagpur mandarin, meet the quality requirements for export. There is also a shortage of farm-gate infrastructure such as pre-cooling chamber, primary processing unit, packing stations, and transport vehicles to ensure timely delivery of fresh fruits while reducing post-harvest losses. The market network is also comparatively weak as compared to major fruit crops.

Given this context, some considerations should be made before exporting. New varieties must be developed with the specific breeding goal of producing export quality fruits. Introduction and domestication of export quality exotic citrus varieties is another option. In order to ensure that mandarin oranges match international quality standards, strong quality control procedures should be employed throughout the production process to maintain uniformity in taste, appearance and size. Standardization will help to develop confidence with global buyers and a positive image for Indian mandarins in export markets. To maintain the freshness and quality of mandarin fruits along the supply chain, a cluster-based cold chain infrastructure should be promoted. A special focus should be placed on informative packaging that emphasizes the quality and origin of the fruits. Clear and accurate labelling, together with the relevant certifications and a



traceability system, will instil customer trust in the product's quality and safety. The advantages of GI tags should be leveraged to encourage exports as well.

Marketing activities should be tailored to suit the preferences and requirements of specific regions or countries. To reach a larger audience and promote the quality of Indian mandarins, the power of digital marketing and social media platforms must be harnessed. To build a robust distribution network and assure a regular supply of Indian mandarins in overseas markets, collaboration with foreign distributors, importers, and retailers is essential. Financial aid, export subsidies, or tax advantages provided by the government to orange producers and exporters will make it more financially viable to reach new markets. International trade events, expos, and B2B meets are also excellent opportunities to showcase produces and establish business connections. Global consumers are increasingly appreciating eco-friendly products, which may be a unique selling point. Sustainable farming practices that minimize the environmental impact of mandarin orange farming should thus be encouraged. Capacity and competency development among farmers and exporters is critical to improving their grasp of international market needs, quality standards, and best agricultural practices.

Citriculture has the potential to make a big contribution to the *Amrit Kaal* of the nation through boosting its position in the global citrus market and multiplying exports by executing these action points, which would benefit growers, exporters, and the economy as a whole. For the purpose of providing adequate technology backup to the Indian citrus sector, ICAR-CCRI is tirelessly working in this direction.

FROM THE INSTITUTE

Research Highlight

- Six citrus genomes were resequenced and submitted to Indian Biological Data Center (IBDC) and received sample accessions
INCAS0100010 (Nagpur mandarin),
INCAS0100011 (Khasi mandarin),
INCAS0100012 (Acid lime-NRCC7),

INCAS0100013 (Coorg mandarin),
INCAS0100014 (Khasi mandarin),
INCAS0100015 (Acid lime NRCC8)

National Patent : Patent entitled “DNA based diagnostics for identification of citrus rootstock cultivars” with inventors Aswath C, Lakshmana Reddy D C, A. K. Das, N. Vijayakumari, I. P. Singh and V. J. Shivankar granted on 27th September, 2022 (ICAR-CCRI, Nagpur and ICAR-IIHR, Bangaluru).

Institute Activities / Events Organized

- Celebrated 38th Foundation day on 28th July, 2022. The celebrations started with a COVID – 19 vaccination camp organized in the office which received a huge response in which more than 100 staff and their families got vaccinated. It was followed with the tree plantation of fruit crops in CCRI campus at the hands of viz., Dr. C. D. Mayee, Ex-Chairman, ASRB, Dr. Pranjib Chakrabarty, Ex-Member, ASRB, Dr. Y.G. Prasad, Director, ICAR-CICR and Dr. Dilip Ghosh, Director, CCRI. In his introductory remarks Dr. Dilip Ghosh, Director, explained in detail about the remarkable contributions made by the institute during its more than three and half decades of journey that has enabled the institute to become a symbol of trust for farmers, industry, academia and other stakeholders in terms of research and development, extension and farm advisory services. A video film titled “CCRI a journey so far since 1985 to 2022” was released. Three Citrus farmers, Sh. Kundan Gulabrao Jadhao from Shindi, Chalisgaon, Jalgaon, Sh. Yashwant R. Mahajan from Aamgaon, Khadki, Wardha and Sh. Jiwan V. Kadu from Morshi, Amravati were felicitated by the Chief Guest for establishing excellent citrus orchards of Nagpur mandarin, Sweet orange and Acid lime crop with the technical guidance and the techniques learned from the scientists of the institute has helped them to get higher yield and income. On this occasion Senior journalists and news reporters Sh. Vinod Ingole from Agrowon and Mrs. Snehlata Srivastava from Lokmat Times were also



Dr. Dilip Ghosh, Director delivering welcome address

felicitated for transferring CCRI information and technologies through newspapers to the farmers and readers. Awards in different categories viz., ‘Employee of the year’, ‘Top Five Research Publications’, ‘Externally Funded Projects’, ‘Contract Research Project’, ‘Licensed/ Commercialized Nursery Technology’ and ‘Patent’ were distributed. Essay competition on the topic ‘Role of Citrus cultivation on livelihoods of rural people in India’ and Quiz competition was also organized and awarded. Various sports events were organized in which all the staff participated enthusiastically and the winners were awarded. Dr. Pranjib Chakrabarty, Ex – Member, ASRB and Chief Guest of the program, appreciated the excellent research work being done by CCRI. He appreciated the farmers’ friendly technologies developed during last 37 years and especially the containerized nursery technology where disease-free planting material of citrus is being distributed countywide. Dr. C.D. Mayee, Ex-Chairman, ASRB, New Delhi in his presidential address appreciated the research work of the institute scientists and their scientific way of dealing with the farmers’ problems. He insisted that the Nagpur orange was basically a ‘table fruit’ and it should be grown and maintained as a ‘table fruit’. The programme was conducted by Dr. Dinesh Kumar, Pr. Scientist and vote of thanks by Dr. N.M. Meshram, Sr. Scientist.



Glimpses of 38th Foundation Day celebration

- **ICAR-CCRI, Nagpur organised social welfare activities as part of Azadi ka Amrit Mahotsav** : ICAR-CCRI, Nagpur, as part of *Azadi ka Amrit Mahotsav* celebrations organized weeklong social welfare activities from 11th -15th August, 2022
- **Blood Donation Camp on 10th August, 2022** at its Institute premises in collaboration with Dr. Hedgewar Blood Bank, Nagpur. The camp was inaugurated by Dr. Dilip Ghosh, Director who encouraged the staff to develop social sensitivities and emphasised the strong need for blood donation drive by saying “A Drop of blood donated is a life saved”. The response of the staff was overwhelming with more than 40 staff including women employees donated blood voluntarily for this noble cause. The institute provided refreshment and also a T-shirt having the emblem of ICAR and *Azadi ka Amrit Mahotsav* as a token of appreciation by the donors. All the donors were awarded with certificates and gift by the blood bank. This blood is valid for six months for free of cost replacement. The samples were carefully sealed and transported to the blood bank.



Blood donation camp at CCRI premises

- Director and staff distributed fruits, clothes, rakhis and lunch boxes to about 300 children, men and women residents of Mahakali Nagar slum area of Beltarodi, Nagpur on 11th August, 2022 with voluntary contributions made by CCRI staff for this program. The slum was affected by a fire incident of 66-cylinder blast recently.



Fruits and Cloth distribution at Beltarodi

- On 12th August, 2022, a tree plantation drive was conducted at Panchwati Vridhashram (Old Age Home) and Shradhanand Anathalay (Orphanage) where Nagpur mandarin and Acid Lime plants were planted by CCRI staff. A similar planatation drive was also conducted on 13th August, 2022 at nearby Wadi Police Station premises.



Plantation at Shradhanand Anathalaya

- On 15th August, 2022 after the flag hoisting ceremony, a vehicle rally by the entire staff of CCRI displaying the strength of farm machinery of the institute and unity in diversity of the nation was organized for about a distance of 2 km. The vehicle rally was accompanied by Tiranga march by the staff and security personnel amidst the backdrop of patriotic songs. Children of staff were also awarded prizes on the occasion according to their academic performance in respective schools.



Prize distribution to children awardees



Tiranga Rally

- Organized “Agri-Start up Conclave and PM Kisan Samman Sammelan” on 17th October, 2022 in which (78) seventy eight farmers from different talukas (i.e. Kalmeshwar, Katol & Hinganghat) in Nagpur district attended. Dr. Dilip Ghosh, Director welcomed the farmers and gave a brief introduction of the programme. Dr. D.T. Meshram, Pr. Scientist explained the importance of programme. Hon'ble Prime Minister Shri Narendra Modi inaugurated the PM Kisan Samman Sammelan and Agri Startup Conclave 2022 at IARI Pusa, New Delhi, India, an event dedicated to meeting the needs of farmers and transforming the agriculture sector. Also inaugurated 600 Pradan Mantri Kisan Samruddhi Kendras and announced the release of Rs.16,000 crore for the PM KISAN fund. He also launched a slew of new schemes including Bharat Urea Bags, which will help companies’ market fertilizers under the single brand name “Bharat”, under the Pradhan Mantri Bhartiya Jan Urvarak Pariyojana- One nation One Fertiliser. Dr. U.R. Sangle, Pr. Scientist proposed vote of thanks.



Dr. Dilip Ghosh seen at Agri Conclave

- ICAR – CCRI, Nagpur participated in the live telecast of the Mission LiFE launch event on 20th October, 2022 with a participation of 19 (Scientists and Officers) staff.

Training Programmes

On-Campus

- Organized “Master Trainers Training Program on Citrus” for State Agriculture Department Officials from 4th to 6th July, 2022. A total of 80 trainees (40 from RAMETI and VANAMATI each) from all over Maharashtra had registered for the training. The concept of the training program was conceived Dr. Dilip Ghosh, Director, ICAR-CCRI and Course Director and Chief Guest of the training program and Shri Ravindra Thakare, IAS (Director, VANAMATI). Dr. Sangeeta Bhattacharyya, Scientist was the Course Coordinator. Dr. Archana Kadu, Additional Director, VANAMATI highlighted the importance of conducting this training program to bridge the gap of research and extension which exists at grass root level. Dr. Dilip Ghosh also emphasized the close coordination which is essential between ICAR, State Department and State Agriculture Universities for effective research and extension in the field of not only citrus but all agricultural crops. A training manual containing lectures of all topics current scenario of citrus industry, citrus cultivars, orchard establishment, bahar management, fruit drop, nutrient and water management

in citrus, disease and insect pest management of citrus, production of disease free planting material through shoot tip grafting and micro-budding, raised bed plantation system and rootstock selection, rejuvenation technology of declined orchards and post-harvest management of citrus was released.

For three days the trainees learnt about the theories were combined with detailed practical sessions.



Dr. Dilip Ghosh, Director, Sh. Ravindra Thakre, Dr. Archana Kadu and Trainees from VANAMATI, Nagpur

- NABARD sponsored training on “Advanced Production Technologies of Citrus” under the aegis of “Capacity Building for Adoption of Technology (CAT) Programmes” segment of NABARD from 12th -14th July, 2022. A total of 25 citrus growers participated. Dr. Dilip Ghosh, Director ICAR-CCRI and Course Director of the training and Sh. Sachin Sonone, AGM (DD), NABARD, Nagpur conceived the idea of organizing the training for dissemination of advanced scientific production technologies to citrus growers of the district. Dr. Dilip Ghosh addressed the trainee farmers and gave an overall idea of the current scenario of citrus industry in India and the need for citrus growers to be proactively following the scientific management practices for earning more profits from their crop. Dr. R.K. Sonkar, Pr. Scientist, and Dr. Sangeeta Bhattacharyya, Scientist were coordinators of the training. Trainees gained knowledge in different aspects of citrus cultivation like production of disease free planting material through shoot tip grafting and micro-budding, orchard establishment,

bahar management, fruit drop, nutrient and water management in citrus, disease and insect pest management of citrus, citrus cultivars, raised bed plantation system and rootstock selection, rejuvenation technology of declined orchards and post-harvest management of citrus. The theories were combined with detailed practical sessions. Demonstrations on field and exposure visits to scientifically managed citrus orchards of progressive farmers Shri Junghare and Shri Dadarao Kale of Katol taluka, Nagpur district. Some farmers were given battery operated knapsack sprayers under the Scheduled Caste Sub-Plan (SCSP) fund of Government of India.



Trainees of NABARD sponsored training with Dr. Dilip Ghosh, Director

- Organized training on “Production Technology of Citrus” for Agricultural Extension Officers of Central and Southern Tibetan Settlements of India during 09th - 11th November, 2022. Dr. Dilip Ghosh, Director, ICAR-CCRI and Course Director while addressing the trainees gave an overall idea of the current scenario of citrus industry in India and highlighted the need for agricultural extension professionals to disseminate the scientific technologies to citrus growers of their respective region. A training manual was also released. Dr. R.K. Sonkar, Pr. Scientist and Dr. Sangeeta Bhattacharyya, Scientist were the coordinators. The technical sessions included aspects on citrus cultivation like production of disease-free planting material through shoot tip grafting and micro-budding, citrus improvement through biotechnology techniques, orchard

establishment, bahar management, fruit drop, nutrient and water management in citrus, disease and insect pest management of citrus, citrus cultivars, raised bed plantation system and rootstock selection, nematode management and rejuvenation technology of declined citrus orchards and demonstration of the packing line facility for citrus. The theories were combined with detailed practical sessions. Off-campus exposure visit to scientifically managed citrus orchard of progressive farmers Shri Prashant Shelke and Shri Akhil Junghare of Nagpur district were conducted. Trainees were also provided with magnifying glass, informative pamphlets of citrus disease-pest management and two books from CCRI publication to help trainees learn more about citrus production technologies.



Group photo of Tibetan trainees

- ICAR-Central Citrus Research Institute, Nagpur, in collaboration with Indian Society of Citriculture (ISC), jointly organized one-day Entrepreneurship Development Programme (EDP) under NAIF Scheme on “Citrus Fruits: Production to Post Harvest Related Technologies” at the institute on 22nd December, 2022. A total of 44 trainees participated in the program. Dr. Ashish Paturkar, Hon'ble Vice Chancellor, Maharashtra Animal & Fishery Sciences University, Nagpur was Chief Guest. Dr. Dilip Ghosh, Director explained briefly about the need of entrepreneurship development in the citrus fruits sector and achievements made by this institute. The ICAR-CCRI Newsletter was also released. In the technical sessions, scientists shared

their knowledge of different technologies related to citrus nursery, citrus fruit production, protection, PHT, processing and value added product development. Training was coordinated by Dr. Dinesh Kumar and Dr. Sangeeta Bhattacharyya.



Group photo of EDP trainees

Off-Campus

- One-day training program on “Advanced Production Technologies of Citrus” organized by ICAR-CCRI, Nagpur under TSP in collaboration with KVK, Gadchiroli at KVK, Sonapur, Gadchiroli on 3rd August, 2022 in which more than 50 tribal farmers participated.
- A training on “Production Technology of Citrus” was organized by ICAR-CCRI, Nagpur on 1st November, 2022 in Police Dadalora Khidki, Gadchiroli district of Maharashtra under the Tribal Sub-Plan in collaboration with Krishi Vigyan Kendra, Gadchiroli. ICAR-CCRI is working on strengthening / promoting the citrus cultivation practices in different non-traditional areas. Dr. Dilip Ghosh, Director, ICAR-CCRI, Nagpur interacting with 223 tribal farmers of this district sensitized about the remunerative aspects of this commercial crop and urged the farmers to adopt the technologies developed by the Institute to enhance yield, quality and income. Dr. A.A. Murkute, Pr. Scientist and Nodal Officer TSP and Dr. N.M. Meshram, Sr. Scientist, CCRI also gave technical inputs to the farmers. Training kits having Agricultural

inputs like biofertilizers, vermicompost, secateurs and vegetable seeds were distributed among the participants. A farmer - scientists interaction session was also organized wherein the queries raised by the farmers related to the crop were answered. Also, present on the occasion were Sh. Nilotpal, Superintendent of Police, Sh. Anuj Tare, Additional Superintendent of Police, Gadchiroli and Dr. Sandip Karhale, Sr. Scientist, KVK, Gadchiroli.



Dr. Dilip Ghosh, Director addressing the participants

- ICAR-Central Citrus Research Institute, Nagpur in collaboration with Rajiv Gandhi National Institute of Intellectual Property Management (RGNIIPM), Govt. Institute under Ministry of Commerce and Industry Nagpur organized a workshop on “IPR : Patents, Design and filing process” at RGNIIPM on 16th November, 2022. This workshop was organized under IPTM – IPR unit of CCRI, Nagpur. The workshop was organized to safeguard the interest of inventors and to upgrade the IP skills of scientists and students.

The workshop was inaugurated by Dr. Dilip Ghosh, Director, ICAR-CCRI wherein he encouraged the Scientists and students to bring out more innovations by taking maximum benefits from the expert faculties. Dr. Ghosh spoke how to protect the research work and the awareness to be created in this regard. Lectures on importance and advantage of protection of IPR invention and discovery, process of patent application filing, forms, fees, patents specifications etc. were delivered by Mr. Nimalaya Sinha,

Joint Controller and Mr. Pankaj Borkar, Deputy Controller of Patents and Designs, RGNIIPM which was very informative. A total of 25 participants from CCRI including scientists, technical officers, RA, SRF where benefitted by this workshop. Dr. Dinesh Kumar, Pr. Scientist and Nodal Officer, IPR coordinated the workshop.



Group photo with Director and scientists

Meeting organized

- ICAR-CCRI has organized the 25th Research Advisory Committee (RAC) meeting on September 14, 2022 under the Chairmanship of Prof. S.P. Ghosh, Ex-Deputy Director General (Hort.), ICAR, New Delhi. Other members included Dr. M. Krishna Reddy, Ex Principal Scientist & Head, Division of Crop Protection, IIHR, Bengaluru; Dr. Trinath Maharana, Ex Professor & Head, Horticulture, OUAT, Bhubaneswar; Dr. Vikramaditya Pandey, I/c ADG (HS), ICAR, New Delhi; Dr. Dilip Ghosh, Director, ICAR-CCRI and Dr. A.K. Das, Member Secretary. All the scientists from Headquarter and regional station participated in the meeting. Director, ICAR-CCRI presented about significant achievements of the Institute for the last year followed by of Action Taken Report and presentations of individual scientists. The Chairman and Members of RAC shared their views and suggested strategies towards future planning and implementation of need-based research programmes.



Progress in RAC

- A virtual meeting with Incharge and staff of KVK, North Tripura and KVK, Gomati was held on 19th September, 2022 under the Chairmanship of Dr. Dilip Ghosh, Director, CCRI, Nagpur Other members included Dr. A.K. Das, Pr. Scientist, CCRI, Nagpur, Dr. G.T. Behere, Pr. Scientist, CCRI, Nagpur, Dr. Soumendra Kumar, Head, KVK, North Tripura, Dr. Sajal Debbarma, SMS, KVK, North Tripura, Dr. Kankabali Valani, SMS, KVK, North Tripura, Dr. Tusi Chakrn, SMS, KVK, North Tripura and Dr. Ranbir Sharma, Head, KVK, Gomati district. This meeting was a review of the visit of Director and staff to Tripura on April, 2022 as per the directives of Regional Committee No. III. The Action Taken by both the KVKs were reviewed and also the problems technical know-how for rejuvenation of declining orchards was discussed. It was suggested to select / identify 5 farmers with declining orchards who will be ready to adopt to CCRI technologies. Also, both the KVKs were asked to prepare the base line data of all the 5 farmers. Director assured to give the seedlings of Rangpur lime as desired by the KVK and also will be imparting a special training again during December, 2022.
- The 39th IMC meeting was held in hybrid mode on 23rd September, 2022 under the Chairmanship of Dr. Dilip Ghosh, Director, ICAR-CCRI, Nagpur. The following members were present: Dr. S.K. Singh, Head, (Horticulture), IARI, New Delhi, Dr. S.K. Singh was also nominated as member in place of ADG, HS by DDG, (HS), ICAR; Dr. D.V. Sudhkar Rao, Pr. Scientist, IIHR, Bangalore; Dr. Anuradha Upadhyay, Pr. Scientist, NRC Grapes, Pune; Dr. Jagadish Rane, I/c Head, NIASM, Baramati, Sh. Sanjay Kumar, Finance & Accounts Officer, CICR, Nagpur, Sh. Y.V. Sorte, Finance & Accounts Officer, CCRI, Nagpur and Sh. Yogesh Jadhao, I/c AO, ICAR-CCRI, Nagpur.



Dr. Dilip Ghosh, Director addressing the participants in IMC Meeting

Rajbhasha Activities

- Institute organized following online Hindi Workshops for the benefit of staff
 - प्रशासनिक कार्यों में हिन्दी की उपयोगिता by Dr. Manoj Pandey, Assistant Professor and Head, Hindi Department, RTMNU, Nagpur on 10th October, 2022.

Memorandum of Understanding (MoU)

- Signed (MoU) for collaborative research on citrus with Sher-e-Kashmir University of Agriculture and Technology, Jammu (SKUAST-J) at Chatha, Jammu on 19th October, 2022. Dr Dilip Ghosh, Director, ICAR-CCRI and Dr. J.P. Sharma, Vice-Chancellor, SKUAST-J signed the MoU on behalf of their respective organizations. Other officers present were Dr. A.A. Murkute, Principal Scientist and Dr. A. Thirugnanavel, Senior Scientist from CCRI and Dr Pradeep Wali, Director of Research, Dr. A.K. Mondal, Dean, Faculty of Agriculture and Dr. S.K. Gupta, Dean, Faculty of Horticulture from SKUAST-J.



Signed MoU with SKUAST-J

- Signed (MoU) for license and transfer of technology of “Containerized Nursery

Propagation Technique to Produce Disease-Free Citrus Planting Material” to M/s. Shivar Nursery, Hatla, Taluka Katol, District Nagpur by signing a MoU on 5th December, 2022. Dr. Dilip Ghosh, Director, ICAR-CCRI informed that ICAR-CCRI is promoting the nursery production through PPP mode and till date has licensed this technology with nine (9) private nurseries across the country, considering the demand of various commercial citrus cultivars in India.



Signed MoU with M/s Shivar Nursery

Signed MoU with seven CGHS approved hospitals of Nagpur (Avanti Hospital, Ganga Care Hospital, KIMS Kingsway Hospital, Meditrina Institute of Medical Sciences, RNH Hospital, Viveka Super Speciality Hospital and Wockhardt Super Speciality Hospital) for providing the cashless medical facility to employees (both serving and retired) of Nagpur based ICAR institutes / regional station on 27th September, 2022.



MoU signing with 7 Hospitals

Skill development and Capacity Building

- Dr. G.T. Behere, Pr. Scientist: Training Workshop for Vigilance Officer of ICAR at ICAR-National academy of Agricultural

Research Management (ICAR-NAARM) Hyderabad from 24 to 26 August, 2022.

- Dr. J.P. Tej Kumar, Scientist: “Metagenomic Data Analysis” during 18-21 October, 2022 conducted by ICAR-Indian Agricultural Statistics Research Institute, New Delhi.

Student Name	Examiner/ Co-guide from CCRI, Nagpur	Title of the thesis, dissertation	Collaborating organization/ SAUs/ College	Type of collaboration/ viva-voce examiner / Research at CCRI
Mr. Debonjal Borah	Dr. Evening Stone Marboh		AAU, Jorhat	Member of Research Advisory Committee (25.08.22)

Academic/Educational collaboration with other organization

Student Name	Examiner/ Co-guide from CCRI, Nagpur	Title of the thesis, dissertation	Collaborating organization/ SAUs/ College	Type of collaboration/ viva-voce examiner / Research at CCRI
Ms. Neha Vimal	Dr. G.T. Behere, Pr. Scientist (Ento.)	Potential role of radiation hormesis in improving the quality of moths to be employed in inherited sterility technique for the management of a serious Lepidopteran pest <i>Spodoptera litura</i> (Fabr.)	University of Delhi	External Examiner for evaluation of PhD thesis on 27 October, 2022
Ms. Poonam Madavi	Dr. G.T. Behere, Pr. Scientist (Ento.)	Biogenic synthesis of metal nanoparticles and their efficacy against pulse beetle (<i>Callosobruchus chinensis</i>)	Dr. PDKV, Akola	External Examiner for evaluation of Ph.D thesis on 23 rd November, 2022
Ms Rumki Heloise Ch. Sangma	Dr. G.T. Behere, Pr. Scientist (Ento.)	Faunal diversity of stingless bees in Nagaland and refinement of rearing technology for cucumber pollination	SASRD Campus, Nagaland University	Research Guidance as Co-supervisor
Mr. Dudhankar Anubhav Madhukar	Dr. N.M. Meshram, Sr. Scientist (Ento.)	Management of major pests of citrus in nursery	Dr. PDKV, Akola	Member Advisory Committee of Ph.D. Student
Ms. M. Akumtola Ao	Dr. Evening Stone Marboh	Effect of girdling on flowering and fruiting of litchi (<i>Litchi chinensis</i> Sonn.)	Nagaland University, SASRD, Medziphema, Nagaland	Evaluated M.Sc. thesis (20.07.22)

Linkage with other organization

- APEDA, Ministry of Commerce and Industry approved a project on Capacity development on Adoption of GAP for quality Nagpur mandarin production in Agar Malwa, Chhindwara and Shajapur district of Madhya Pradesh by organizing training programmes.
- Agri Drone Project (ADP) funded by DA&FW, New Delhi under Sub Mission on Agricultural Mechanization for Implementation of its Component I under Drone technology demonstration.
- Organized demonstration on “Citrus Mechanizations for implementation of Drone technology” which was provided by Iotech World Avigation Pvt. Ltd. Dated 21st October, 2022.

Publications:

Research Papers (In Peer Reviewed Journals)

- Ghosh, D.K., Kokane, S., Savita, B.K., Kumar, P., Sharma, A.K., Ozcan, A., Kokane, A. and Santra, S. (2022) Huanglongbing Pandemic: Current Challenges and Emerging Management Strategies. *Plants*, 12(1),160 (NAAS Rating : 9.94).
- Gupta, D.N., Dalal, V., Savita, B.K., Alam, M.S., Singh, A., Gubyad, M., Ghosh D.K. and Sharma, A.K. (2022). Biochemical characterization and structure-based in silico screening of potent inhibitor molecules against the 1 cys peroxiredoxin of bacterioferritin comigratory protein family from *Candidatus Liberibacter asiaticus*. *Journal of Biomolecular Structure and Dynamics*, 1-13 (NAAS Rating : 9.39).

- Balakumaran, M., Chidambaranathan, P., Tej Kumar J.P., Sirohi, A., Kumar Jain, P., Gaikwad, K., Iyyappan, Y., Rao, A.R., Sahu, S., Dahuja, A. and Mohan, S. (2022). Deciphering the mechanism of anhydrobiosis in the entomopathogenic nematode *Heterorhabditis indica* through comparative transcriptomics. *Plos one*, 17(10), p.e0275342 (NAAS Rating: 9.24).
- Abalavadi Thammaiah, R., Pathour, S., Meshram, N., Kammar, V., Majumder, S., Srivastava, C., and Singh, J. (2022). Morphological characterization and distribution of antennal sensilla of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) using scanning electron microscopy. *Microscopy Research and Technique*, 85(4), 1371-1391 (NAAS Rating : 8.77).
- Kumar, D., Ladaniya, M.S., Gurjar, M., Mendke S. and Kumar, S. (2022). Positive retention of bioactive compounds and biochemical components of Sathgudi sweet orange (*Citrus sinensis* L. Osbeck) juice concentrate by integrated membrane process. *Journal of Food Measurement and Characterization*, 1-10 (NAAS Rating : 8.43).
- Firake D.M., Ghosh R., Kumar M., Milton A.A.P., Sanjukta R.K., Behere G.T. and Pandit S. (2022). Bioactivity of *Zanthoxylum armatum* fruit extract against *Spodoptera frugiperda* and *Tuta absoluta*. *Journal of Plant Diseases and Protection*, 130, 383-392 (NAAS Rating : 7.93).
- Rai, S., Meshram, N. M., Singaravel, M., and Shashank, P. R. (2022). Description of a new leafhopper species *Phlogotettix unicus* sp. n. Stuti & Meshram (Hemiptera: Cicadellidae) from India, along with molecular and morphological notes on its morpho-variant. *Biologia*, 77(11), 3203-3208 (NAAS Rating : 7.35).
- Roy, P., Hansra, B.S., Burman, R.R., Roy, T.N., Bhattacharyya, S. and Ahmed, R. (2022). Can Farm Mechanization Enhance Small Farmers' Income? Lessons from Lower Shivalik hills of Indian Himalayan Region. *Current Science*, 123(5), 667-676 (NAAS rating: 7.10).
- Jat, M., Meshram, N. M. and Dey, D. (2022). *Lapnana*, a new genus of tribe Evacanthini (Hemiptera: Cicadellidae: Evacanthinae) from India. *Zootaxa*, 5222(6), 578-584 (NAAS Rating : 7.09).
- Rajgopal, N. N., Meshram, N. M. and Dey, D. (2022). A new species and some new records of leafhopper tribe Scaphoideini (Hemiptera: Cicadellidae: Deltocephalinae) from India. *Zootaxa*, 5182(4), 348-360 (NAAS Rating : 7.09).
- Malvi, S., Bhatt, J., Das, A.K. Pali, P., Ashok Kumar, Chouhan, A., Chichghare, S. and Kharte, S. (2022). Identification and characterization of endophytic bacteria isolated from citrus roots with biocontrol potential against *Phytophthora nicotianae*. *Indian Phytopathology*, 76, 191-199 (NAAS Rating : 5.95).
- Bhattacharyya, S., Burman, R.R., Padaria, R.N. and Paul, S. (2022). Comparative analysis of status of farming of model villages and villages adopted under sansad Adarsh Gram Yojana in Maharashtra and Telangana. *Indian Journal of Extension Education*, 58(1), 30-34 (NAAS rating: 5.95).
- Roy, P., Hansra, B.S., Burman, R.R., Roy, T.N., Bhattacharyya, S. and Ahmed, R. (2022). An introspection into impact of combine harvester: A tale of sustainable livelihood security. *Indian Journal of Extension Education*, 58(1), 66-72 (NAAS rating: 5.95).
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- Malvi, S., Bhatt, J., Das, A.K. Pali, P., Ashok Kumar, Chouhan, A., Chichghare, S. and Kharte, S. (2022). Evaluation and determination of minimum inhibitory

concentration of fungicides against root rot pathogen of Citrus (*Phytophthora nicotianae*). *Biological Forum* 14(4), 415-423 (NAAS 5.11).

- Kumar, D. and Gurjar, M. (2022). Seventy-five years of research and development in nutraceuticals in horticultural crops. *International Journal of Innovative Horticulture*, 11(1), 96-102 (NAAS rating : 3.40).

Oral Papers Presented in Seminar/Symposia/Conferences etc.

- International Citrus Congress held during 6-11 November, 2022 at Mersin, Turkey.
 - Dr. A.K. Srivastava, Pr. Scientist: Diagnosis and management of nutrient constraints in citrus: Futuristic reframing invited keynote lecture.
 - Dr. N. Vijayakumari, Pr. Scientist: Induction of polyploidy in Citrus scions through *in vitro* colchicine treatment of seed-derived Explants.

Abstracts/Poster Paper presented in Proceedings/Souvenir of Seminar/ Symposia/ conferences etc.

- Tej Kumar J.P., Thirugnanavel, A., Kamde, S., Kuthe, J. and Murkute, A.A. (2022): Genetic diversity analysis of Acid lime accessions using SSR under crop improvement by molecular and biotechnological approaches in International Conference on Biotechnology Trends and Future Prospects-BTFP-2022, GKVK, Bengaluru during 13-15 September 2022 (Poster).

Training Manuals

- Bhattacharyya S. and Ghosh D. (2022): Training Manual on Master Trainers Training on Citrus, 4-6 July, 2022, ICAR-CCRI, Nagpur.
- Sonkar R.K., Bhattacharyya S. and Ghosh D. (2022): Training Manual on NABARD Sponsored Training Program on Advanced Production Technologies of Citrus, 12-14 July, 2022, ICAR-CCRI, Nagpur.

- Sonkar R.K., Bhattacharyya S. and Ghosh D. (2022): Training Manual on Production Technology of Citrus for Agriculture Extension Officers of Central and Southern Tibetan Settlement 9-11 November, 2022, ICAR-CCRI, Nagpur.
- Bhattacharyya, S. and Santra, B. (2022). Market Led Extension: Role in Empowerment of Livestock & Allied Farm Stakeholders. In book: *Advanced Extension & Communication Strategies for Sustainable Livelihood Through Animal Husbandry and Allied Farming System* edited by Arunasis Goswami and Sukanta Biswas, pp: 170-181. Publisher: Nipa Genx Electronic Resources & Solutions P. Ltd. New Delhi-110 034.

Book Chapter

- Garg, S., Shashank, P.R., Meshram, N.M. and Bhagyashree, S. N. (2022). Modern molecular tools for insect diagnostics. In *Genetic Methods and Tools for Managing Crop Pests* (pp. 45-67). Singapore: Springer Nature Singapore.

Popular Articles

- Pakhmode, P. and Bhattacharyya, S. (2022). शेतातील तरुणांचा सहभागाचे महत्त्व, Mrugdhara. July 2022.
- Bhattacharyya, S. and Rai, C.K. (2022). *Role of Fortified Food Products in Ensuring Nutritional Security*. *Ecofarming*, 02(04): 230-236.
- Bhattacharyya, S. and Sonkar, R.K. (2022). *Capacity Development of Citrus Growers of Nagpur: NABARD-Sponsored Training Program on 'Advanced Production Technologies of Citrus'* (12 -14 July 2022). AESA: My Meeting Notes, No.116/November 2022.
- Azad, A.K., Bhattacharyya, S. and Pakhmode, P. (2022). *Revitalising North East India through Agri-Business Interventions*. *Times of Agriculture*, pp: 100-101, November, 2022.

- Sonkar, R.K, Bhattacharyya, S., Pakhmode, P., Thakre, P. and Zade, P. (2022). लिंबुवर्गीय फलपिका मध्ये उंच वाफे लागवड प्रणाली, Krishi Jagran, December, 2022.
- Pakhmode, P. and Bhattacharyya, S. (2022). भारतीय शेतीचे भविष्य : डिजीटल शेती. Krishi Jagran, December, 2022.

e-Publication / Documentary

- Video Film prepared on “ICAR-CCRI: 1985-2022 a journey so far..” and released on the occasion of CCRI Foundation Day on 28th July, 2022.
- One-minute Video film compiled and shared to Ministry of Tourism on December 8, 2022 for publicity of Nagpur mandarin in G20 Meetings.
- One-minute Video film compiled and shared to ICAR Hqs., New Delhi on December 27, 2022 for highlighting research and achievements of Horti. Sci. Division in G20 Meetings.

Participation of Scientist in workshop/ meeting etc.

- Dr. Dilip Ghosh, Director : Outreach Programme for the export potential of fruits, vegetables and agri-produces” at Amravati on 17th July, 2022.
- Dr. Dilip Ghosh, Director and Dr. A.A. Murkute, Pr. Scientist: International Conference on Harnessing Indian Agriculture for Domestic and Global Prosperity at ICAR, New Delhi during 22-23 July, 2022.
- Dr. Dilip Ghosh, Director, Dr. A.A. Murkute, Pr. Scientist and Dr. G.T. Behere, Pr. Scientist: Agrovision Advisory Committee Meeting on 22nd August, 2022 at VANAMATI, Nagpur
- Dr. Dilip Ghosh, Director, Dr. A.K. Das, Pr. Scientist and Dr. N.M. Meshram, Sr. Scientist: Fruit Drop meeting at Akola on 24th August, 2022.
- Dr. Dilip Ghosh, Director, Dr. A.A. Murkute, Pr. Scientist and Dr. Sangeeta



Bhattacharyya, Scientist: “3rd Outreach Programme for the export potential of fruits, vegetables and agri-produces” at Hotel Centre Point, Nagpur on 10th September, 2022 which was jointly organized by APEDA, Govt. of India, New Delhi and Agrovision Foundation, Nagpur and inaugurated by Hon’ble Central Minister, Shri Nitin Gadkari ji.

- Dr. Dilip Ghosh, Director: XXVI Meeting of ICAR Regional Committee-II on 14th October, 2022 (Virtual).
- Dr. Dilip Ghosh, Director, Dr. A. Thirugnanavel, Sr. Scientist and Dr. Kiran Kumar Kommu, Scientist: 26th meeting of ICAR Regional Committee-IV for U.P., Bihar and Jharkhand states on 7th November, 2022.
- Dr. A.K. Das, Pr. Scientist and Dr. Dinesh Kumar, Pr. Scientist: Meeting with a high level ICAR team consisting of Shri Manoj Ahuja, Secretary DA&FW, Shri Abhisekh Likhi, Addl Secretary, DA&FW, Shri Prabhat Kumar, Hort Commissioner, DA&FW and other Govt. officials at Sahayadri Farm, Nasik on 27th December, 2022.
- Dr. Dinesh Kumar, Pr. Scientist: (Hort.):
 - Nominated as an expert by Ministry of Food Processing Industries (MoFPI), New Delhi for inspection of Food testing laboratories. Visited and inspected the Food testing laboratory project of Shree Analytical Testing & Research Laboratory, Jalgaon on 3rd July, 2022.
 - Committee meeting at Dy. AMA’s chamber at DMI, Nagpur on 11th July, 2022 for discussion to upgrade the infrastructure of nodal training centre.

- Dr. G.T. Behere, Pr. Scientist and Dr. N.M. Meshram, Sr. Scientist: National Dialogue on Soil Use: problems and Solution at CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur on 19th August, 2022
 - Dr. G.T. Behere, Pr. Scientist and Dr. A.K. Das, Pr. Scientist: Review Meeting on fruit drops problems and remedies in Nagpur mandarin and sweet orange in Nagpur Division, meeting was called by JDA, Nagpur on 17th October, 2022 (Virtual).
 - Dr. D.T. Meshram, Pr. Scientist: workshop on “Training Need Assessment” to finalize academic calendar Training for the year 2022-23 which was organized by Regional Agricultural Extension Management Training Institute (RAMETI), Amravati on 29th November, 2022.
 - Dr. N.M. Meshram, Sr. Scientist: Second meeting of the multi-institutional committee constituted by the Govt. of Maharashtra under the Chairmanship of Hon’ble Vice Chancellor, Dr. P.D.K.V., Akola to address the issues associated with the fruit drops in Nagpur mandarin and sweet oranges, first meeting was held at Committee room of the VC, Dr. P.D.K.V., Akola on 24th August, 2022.
 - Dr. J.P. Tej Kumar, Scientist ‘SS’: International Conference on “Biotechnology Trends and Future Prospects”-BTFP-2022 during 13-15 September 2022 conducted by Department of Plant Biotechnology, UAS, GKVK, Bengaluru.
 - Dr. Evening Stone Marboh, Scientist ‘SS’ (Fruit Science): 59th ZREAC (Rabi) Meeting, 2022 for North Bank Plains Zone of Assam, RARS, North Lakhimpur, Assam, 28th September, 2022
 - Dr. Sangeeta Bhattacharyya, Scientist: “District as Export Hub focussing on mandarin Orange from Nagpur” organised by Federation of Indian Export Organisation in association with VIA on 4th August, 2022.
- Lectures delivered in training at other Institute/Organization**
- Dr. A. Thirugnanavel, Sr. Scientist: Problems and prospects of acid lime cultivation in Tamil Nadu organized by Citrus Research Station, Tamil Nadu Agricultural University, Sangarankoil, Tirunelveli on 12th August, 2022
 - Dr Dilip Ghosh, Director: Role and participation of CCRI in encouraging farmers to cultivate export quality oranges in “3rd Outreach Programme for the export potential of fruits, vegetables and agri-produces” on 10th September, 2022.
 - Dr. Dinesh Kumar, Pr. Scientist: training course on “Grading Supervisors” at Directorate of Marketing, DMI, Nagpur
 - Post-Harvest Technology of Citrus fruits on 11th July, 2022
 - Post-Harvest Management and Marketing of Citrus fruits on 20th July, 2022
 - Value addition on 21st July, 2022
 - Post-Harvest Management, waste-utilization of Citrus fruits on 20th September, 2022
 - Processing & Value addition on 21st September, 2022
 - Dr. G.T. Behere, Pr. Scientist:
 - Integrated management of insect pests of citrus to the Agricultural Supervisors and Assistant working in the Nagpur Sub Division for the HORTSAP project at Regional Agricultural Management and Extension Institute (RAMETI) during 19-20 July, 2022.
 - Management of entomological fruit drops in Nagpur mandarin at Krishi Karyashala organized by JDA, Amravati and Chandurbazar, District-Amravati on 9th August, 2022.
 - Integrated management of insect pests of citrus in the Induction training for newly recruited Agricultural Assistant of Govt. of Maharashtra at Regional

Agricultural Management and Extension Institute (RAMETI) on 1st September, 2022.

- Management of entomological fruit drops in Nagpur mandarin and Sweet orange for YouTube Channel (Part-89) of Govt. of Maharashtra on 20th October, 2022.
- Dr. D.T. Meshram, Pr. Scientist: Irrigation and Water Management Practices under the project of pilot scale study done in collaboration between IIM, Nagpur and with Professor of Navonil Mustafee in University of Exeter (UK) at Jamgaon village, Amravati District dated 1st July, 2022.
- Dr. N.M. Meshram, Sr. Scientist:
 - Integrated management of insect pests of citrus in the Induction Training for newly recruited Agricultural Assistant of Govt. Maharashtra at Regional Agricultural Management and Extension Institute (RAMETI) on 19th July and 1st September, 2022.
 - Citrus insect pest management in Shrimati Dwarkabai Tiwasekar Vidyalaya, Soneri, on 8th October, 2022.
 - Role of insect diversity in an agroecosystem: Hemiptera on 20th October, 2022 at IARI, New Delhi in the ICAR-sponsored online training programme entitled “Diagnosis and Management of economically important insects in Agriculture” (9-25 November, 2022).
 - Management of entomological fruit drops in Nagpur mandarin and Sweet orange of Govt. of Maharashtra on 20th October, 2022.
- Dr. D.T. Meshram, Pr. Scientist - “Production technologies in Citrus” and Dr. N.M. Meshram, Sr. Scientist - “Citrus Insect Pest Management” in agricultural workshop on occasion of golden jubilee of Shrimati Dwarakatai Tiwasekar Vidyalay, Sonori, Tq.- Chandur Bazar, District- Amravati dated 8th October 2022.

- Dr. Evening Stone Marboh, Scientist ‘SS’ (Fruit Science): “Rejuvenation of declined Khasi Mandarin Orchards” and “Management of insect pests and diseases of citrus” during a training programme on ‘Production and Rejuvenation Practices of Declined Mandarin Orchards’, College of Horticulture and Forestry, CAU, Pasighat, Arunachal Pradesh, 20th December 2022.
- Dr. Sangeeta Bhattacharyya, Scientist:
 - “Citrus production technologies” to citrus farmers in the Krishi Din Program at Savangi, Kalmeshwar on 1st July, 2022.
 - “Index development in extension research” to M.Sc. and Ph.D students in the discipline of extension education for research methodology course at ICAR-NDRI, Karnal on 7th July, 2022.

Other Extension Activities

Exhibition

- Institute disseminated its technologies by displaying fruit samples, plant samples, publications, technologies etc. in following Krishi Exhibitions:
 - Agril. Tech. Exhibition and Conference - 5th Farm Tech. Asia at IGKV, Raipur, Chhattisgarh from 14-17th October, 2022.
 - National Level Horticulture Value Chain in India – Potential and Opportunities Function during 1-2 November, 2022 at VAMNICOM Institute, Pune. Hon'ble Union Minister of Agriculture Shri Narendra Singh Tomar and Maharashtra State Agriculture Minister Shri Abdul Sattar and more than 150 farmers, students, researchers visited CCRI stall.



VAMNICOM, Pune

➤ AGROVISION – 2022 (13th Edition)- Central India’s largest Agri-summit held in Nagpur during 25 - 28th November, 2022 which witnessed a massive gathering of



farmers, entrepreneurs, students etc. across the country. During Inauguration

of the Agri Exhibition, Shri Shivraj Singh Chouhan, Chief Minister of Madhya Pradesh stressed the need for innovation and viable technologies in Agriculture to enhance the farmer’s income. Shri Nitin Gadkari, Union Minister for Road Transport & Highways and Chief patron of the Mega event, emphasised that the farmers should adopt science and technology based solutions to their problems and also take the initiative in the production of bio-fuels and turn themselves from food suppliers to energy providers. During the special workshop on citrus, Dr. Dilip Ghosh, Director, ICAR-CCRI, urged the farmers, stakeholders, beneficiaries to take maximum benefit of all the technologies developed by the Institute.

Survey

- A field visit by Dr. A.K. Srivastava, Pr. Scientist; Dr. A.K. Das, Pr. Scientist; Dr. G.T. Behere, Pr. Scientist and Dr. D.T. Meshram, Pr. Scientist, ICAR-CCRI, Nagpur was undertaken under the Chairmanship of Dr. V. Pandey, ADG, ICAR, New Delhi on 23-24th September, 2022 at Jhalwar district, Rajasthan to assess the issues related to flower blooming in Nagpur mandarin orchards. The team interacted with citrus growers about various problems encountered by them particularly in citrus cultivation. The team visited their mandarin orchards and examined the leaf and fruit samples of *Ambia*.

Visit to CCRI

During the quarter, the number of farmers, students and trainees visited CCRI, Nagpur as follows:

Farmers

State	District	No. of Famers and Date
Chattisgarh	Mungeli	24 farmers and 2 Agriculture department officials on 23 rd November, 2022

Students

S. N.	Name of College and place	No. of Students and Staff	Date
1.	Anand Niketan College of Agriculture, Warora Chandrapur	95 students	21 st July, 2022
2.	College of Agriculture, Hingoli, (VNМКV) Parbhani	B.Sc 2 nd year students	29 th September, 2022
3.	Ramkrishna Bajaj College of Agriculture, Wardha		30 th September, 2022
4.	Shri Sant Shankar Maharaj College of Agriculture, Pimpalkhuta, Amravati	104 students of first year B.Sc.Agri	7 th October, 2022
5.	Orchid’s The International School, Nagpur	63 students	24 th November, 2022.
6.	Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences, Shivamoga, Karnataka	40 students (B.Sc. Ag. Hons. Batch I and II)	15 th and 22 nd December, 2022
7.	AAU, Assam	25 UG and PG students visited RRCC, Assam	17 th December, 2022

Trainees / Officers

- Forty DAESI Trainees, Rural Institute, Pipri, Wardha on 12th August 2022.
- Hundred Group B trainee officers from Vasantao Naik State Agriculture Extension Management Training Institute (VANAMATI) on 3rd September, 2022.
- Group C trainee officers of Regional Agriculture Extension Management

Training Institute (RAMETI) trainees on 22nd September, 2022.

- Twenty-eight Group C Officers of State Ag. Dept. from RAMETI, Nagpur visited on 7th December, 2022.



DAESI Trainees

RAMETI Trainees

Advisories issued

- Alert for *Phytophthora* brown rot in Mosambi / Sweet orange and Nagpur santra on 5th July, 2022 (English and Marathi).
- Management of *Phytophthora* brown rot on 20th July, 2022 (Marathi and English).
- Management of Mites (Rust and Green) on 25th July, 2022 (Marathi).
- Management of Fruit fly on 3rd August, 2022 (Marathi).
- Management of Fruit sucking moth in Nagpur mandarin and sweet orange on 30th August, 2022 and 27th September, 2022 (Marathi and English).
- Management of Blackfly in Nagpur mandarin on 21st November, 2022 (Marathi).

Online Advisories issued on NCIPM Portal for the management of insect pests, diseases in Nagpur mandarin and sweet orange

Sr. No.	Name of District	No. of advisories suggested	
		Nagpur mandarin	Sweet orange
1	Amravati	91	9
2.	Nagpur	32	12
3.	Wardha	23	5
4.	Wasim	12	-
	Total	158	26

Rootstock analysis service

- Total 22 rootstock samples were received from various stakeholders like state agriculture department, Maharashtra and private nurseries. All the samples were screened for the rootstock identification. The current set of markers can identify six rootstocks i.e Rough lemon, Rangpur lime, Sour orange, Alemow, Galgal and Trifoliolate orange.

Regional Research Centre for Citrus (RRCC), Biswanath Chariali, Assam

- ICAR-CCRI, Nagpur organized a training programme on ‘Production and Rejuvenation Practices of Declined Mandarin Orchards’ under the NEH Plan at College of Horticulture and Forestry (CHF), CAU, Pasighat, Arunachal Pradesh on 20th December, 2022 which was coordinated by Dr. Dilip Ghosh, Director and Dr. R.K. Sonkar, Pr. Scientist (Hort.). This training programme was in collaboration with ICAR-ATARI, Guwahati, CHF Pasighat and Department of Agriculture, Govt. of Arunachal Pradesh. The programme was initiated as per recommendation of ICAR - Regional Committee Meeting (Zone III) for undertaking a demonstration of rejuvenation technology in declined mandarin orchards of Dambuk and Wakro village. A total of 50 farmers from Pasighat, Dambuk and Wakro areas took part in the training programme. All the participating farmers were later provided with starter kits in knapsack bags comprising of pruners and biopesticides. An exhibition displaying different citrus fruits was also done.



Participants in the training programme

Demonstration

Monitoring the declined orchards at farmers' field : A farmers' orchard at Sohkwai, RiBhoi District of Meghalaya was adopted for undertaking rejuvenation practices of mandarin orchards. The area was once a mandarin growing hub but due to decline, most farmers have switch to alternate farming system. Mr. Clement Nongmali, a mandarin grower from Sohkwai is having 150 adult mandarin trees in his orchards which are showing signs of decline. On 13.12.22, Dr. E.S. Marboh, Scientists, RRCC, Biswanath Chariali and Dr. Tasvina, Senior Scientist and Dr. Balusamy A, Scientist from ICAR-NEH, Umiam visited the site. Fruit and soil samples was collected. A practical demonstration on pruning, canopy management, identifying symptoms of trunk borer attack as well as nutrient deficiency was imparted. Necessary inputs including secateurs, plant protection chemicals and fertilizers was distributed.



Providing inputs to Khasi Mandarin farmer's of Sohkwai village, Ri-Bhoi

Exhibition

- Displaying different varieties and species of citrus during Luminox 2.0 Agricultural Exhibition, Biswanath College of Agriculture, Biswanath Chariali on 22nd December, 2022.



Students of Biswanath College of Agriculture visiting exhibition stall of RRCC

Survey

- Dr. Evening Stone Marboh, Scientist 'SS' (Fruit Science) visited CRS, Tinsukia, RiBhoi and Pynursla for collection of pummelo germplasms as per recommendation of 59th ZREAC (Rabi) Meeting, 2022 for North Bank Plains Zone of Assam, RARS, North Lakhimpur, Assam, 28th September, 2022.

Infrastructure at RRCC

- Two Greenhouses- one for development of protected/ foundation mother block and the other for development of nursery multiplication block has been installed.



Good Governance / Swachh Bharat Mission

- Cleanliness was observed at the office, farm and residential campus.

Celebration

- Observed Vigilance Awareness Week during 31st October, 2022; Constitution Day on 26th November, 2022 and Dr. B.R. Ambedkar Maha Parinirvan Diwas on 6th December, 2022.
- Celebrated World Soil Day on the theme of "Soils: Where Food Begins" on 5th December, 2022 at Gram Panchayat of Kinhi (Dhanoli) village of Hingana taluka in Nagpur district in which forty-seven farmers attended. Dr. D.T. Meshram, Pr. Scientist explained the importance of day and the role of soils in food security and how the loss of soil fertility results in low crop yields and crop failures, leading local populations to hunger, malnutrition and poverty. Dr. U.R. Sangle, Pr. Scientist spoke on major and micro-nutrients and organic matter. The progressive farmers discussed the issues related to use of organic fertilizers in black cotton soil for citrus fruit crop production.



Scientists addressing the farmers at Kinhi

- Institute celebrated Hindi Saptah from 14-20th September, 2022. During the Hindi Saptah Institute organized various competitions viz., translation, quiz, essay in which the staff participated enthusiastically. The concluding programme was held on 21th September, 2022 and the prizes to the winners of competitions were distributed by the Chief Guest Dr. S.K. Shukla, Head, GTC, Nagpur and Dr. Dilip Ghosh, Director.



Dr. Dilip Ghosh and Dr. S.K. Shukla Chief Guest distributing prize

Distribution of disease-free planting material under CCRI

- ✓ A total of 94,732 disease free planting material of citrus rootstocks, fruits and seed distributed and revenue of Rs. 69,85,526/- generated under Revolving fund Nursery Project.

Awards, Honours and Recognition

- Dr. N.M. Meshram, Sr. Scientist: Member of Board of Studies in Zoology under the Faculty of Science and Technology on 30th July, 2022 at RTMNU, Nagpur.
- Dr. Dilip Ghosh, Director: Chairman of DPC of Technical staff at NBSS&LUP, Nagpur on 8th August, 2022.

- Dr. G.T. Behere, Pr. Scientist: DG Nominee for the Promotion of ARS Scientists under revised career Advancement Scheme for the discipline of Agricultural Entomology at ICAR-Central Institute for Cotton Research, Nagpur on 8th September, 2022.
- Dr. Sangeeta Bhattacharyya, Scientist: Awarded Certificate of Excellence in Reviewing from European Journal of Nutrition & Food Safety, Asian Journal of Agricultural Extension, Economics & Sociology, International Journal of Environment and Climate Change and Asian Journal of Advances in Agricultural Research.

Distinguished Visitors

- Hon. VC, Dr PDKV, Akola and State Agril Department Officers on 22nd August, 2022.
- Shri Eknath Dawale, IAS, Secretary (Agriculture), Government of Maharashtra, visited on 23rd December, 2022. Dr. Dilip Ghosh, Director showed various experimental blocks, field performance of different exotic citrus cultivars, nursery work activity and detailed procedures being followed for production of superior quality planting material, post-harvest and processing activity etc. Sh. Dawale highly appreciated the excellent work being done by this institute for the overall development of citrus industry of the country. Dr. Ghosh has also assured all technological help to the staff of Maharashtra government.



Dr. Eknath Dawale, Dr. Dilip Ghosh and CCRI Scientists & State Government officials

- Sh. G. P. Sharma, Director (Finance), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi visited on 27th July, 2022.
- Dr. Indra Mani, Vice Chancellor, Parbhani, visited on 12th September, 2022.

- Dr. P. Chowdappa, Ex-Director, CPCRI, Kasargod visited on 28th December, 2022



Dr. P. Chowdappa visit to CCRI Nursery

Welfare Activity

- ICAR-CCRI staff participated in the ICAR Zonal tournament (West Zone) during 22-25 November, 2022 organized by ICAR-National Research Centre on Camel, Bikaner.

Personnel

Appointment/Joining

Contractual Staff

- Sh. Chetan S. Pangul Project Associate-I w.e.f 1st July, 2022.
- Ms. Vaishnavi Berad, Young Professional-I w.e.f. 5th August, 2022.
- Sh. Jitendra U. Kuthe, Young Professional-II w.e.f. 11th August, 2022.

- Sh. Pratik Pali, Young Professional-I w.e.f. 12th August, 2022.
- Sh. Gopal N. Patil Project Associate-II w.e.f. 12th December, 2022.

Superannuation/relieving

- Sh. P.R. Bagde, Sr. Tech. Asstt. relieved on 31st October, 2022 on superannuation.

Contractual Staff

- Sh. Shubham A. Chichghare, Young Professional-I relieved on 23rd July, 2022.
- Sh. Amol D. Kokane, Senior Research Fellow relieved on 20th August, 2022.
- Sh. Sunil B. Kokane Research Association relieved on 30th November, 2022.
- Sh. Chetan S. Pangul Project Associate-I (PA-I), relieved on 13/12/2022.
- Sh. Datta R. Surwase Young Professional-I relieved on 31st December, 2022.

Edited by

Dr. A.K. Das, Pr. Scientist (Pl.Patho.), **Dr. Kiran Kumar Kommu**, Scientist 'SS' (Nematology),

Dr. Sangeeta Bhattacharyya, Scientist (Extension) and **Dr. Dilip Ghosh**, Director

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Citrus Newsletter is an official document of the Central Citrus Research Institute,

P. B. No. 464, Shankar Nagar, P.O., Amravati Road, Nagpur – 440010 (Maharashtra)

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