

VANIJYA KRISHI

Newsletter of ICAR-Central Tobacco Research Institute
(ICAR-National Institute for Research on Commercial Agriculture)



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Published by

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From the Director's Desk



I am happy to cite that Dr. Himanshu Pathak, Hon'ble DG, ICAR & Secretary, DARE, visited CTRI RS, Guntur on 19.06.2024. He appreciated the research contributions of the institute which has translated into enhanced foreign exchange earnings to Indian economy and augmented farmers income of tobacco growers. Further, He assured that the official order to rename the Institute as the ICAR-National Institute for Research on Commercial Agriculture

(ICAR-NIRCA) will happen very soon. This will boost research in various areas of commercial agriculture to ensure the long-term viability and global competitiveness of high value commercial crops. Dr. Himanshu Pathak interacted with the scientists, praised the comprehensive display of all activities and innovative technologies through an exhibition, and advised the Institute and its Research Stations to focus on the expanded mandate in general and value addition in particular. In addition, he emphasized that climate-resilient agriculture is crucial for sustainable development and urged scientists to concentrate their research efforts in this direction.

Another important event in this period is the celebration of the 77th Foundation Day on 01-05-2024. Dr. Trilochan Mohapatra, Chairperson, Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA), and Dr. R.C. Agrawal, Deputy Director General (Education), ICAR, several other dignitaries from state and different ICAR institutes and trade & industry have participated in the foundation day. The institute's contribution, significant achievements, and future road map of the Institute was informed to the gathering. Honourable guests have acclaimed the institute's remarkable journey since its inception in 1947. The dignitaries gave their valuable remarks on the institute's progress and its contribution in shaping tobacco science in the country and released seven institute publications on this fortunate occasion. In addition, the Indian Society of Tobacco Science (ISTS) honoured the scientists and industry with various awards, and fellow of ISTS for the biennium 2019-20 and 2021-22. On this foundation day, Dr. Trilochan Mohapatra, also inaugurated the 'Turmeric Processing Unit' and new 'LC-MS/MS' instrument and visited different laboratories of the institute.



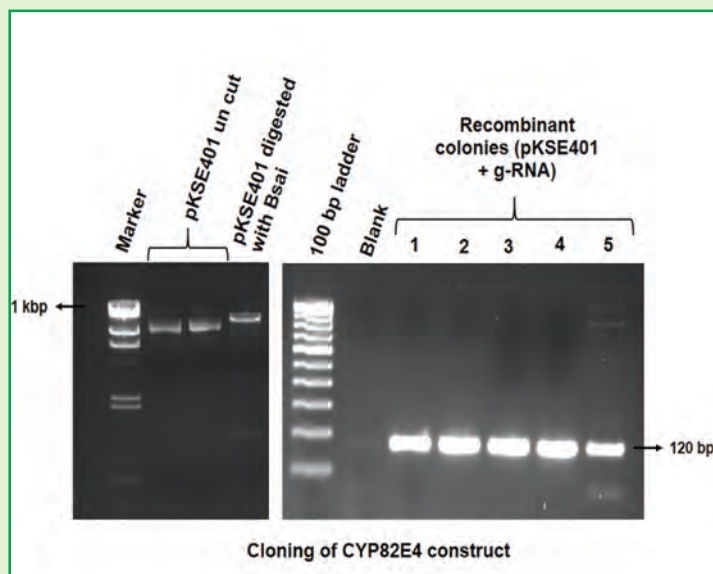
Research Highlights

CROP IMPROVEMENT

- Eight promising FCV entries (V-5139, V-5143, V-5147, RS-36, RS-41, RS-42, NLCR-1-11 and FCH252) and two chewing lines (HV. 2009-3 and HV. 2011-2) were advanced to AINPT multilocation trials.
- Identified a resistant source for *Orobanche* infestation from wild species i.e. *N.umbratical-nesophila*.
- A total of 300 unique SSR primers were identified across the genome (24 chromosomes of tobacco) and got synthesized, these were being used in molecular characterisation and marker assisted breeding.
- For the identification of molecular markers for accelerating the development of wilt resistant tobacco cultivars, 11 *Fusarium* isolates causing wilt infection in tobacco were initially collected and characterized. All the 11 isolates found to be pathogenic to tobacco plants causing disease development (22-89%). The isolate, TFW-9 (NN Halli) showed maximum disease incidence (89%) as compared to other isolates and designated as highly virulent.
- Upon phenotyping of one of the mapping population (F_2 population) generated by crossing *Fusarium* (Hunsur isolate) susceptible (FCH-22) and resistant (FCJ-11) lines, the resistance is recessive in nature. Ten SSR markers showed polymorphism in the parents and one SSR is showing polymorphism in F_2 population.
- Guide RNA targeting the CYP82E4, CYP82E5 and CYP82E10 genes involved in the formation of Tobacco Specific Nitrosamines (TSNA) that are responsible for tobacco related health risks was cloned into the vectors, pRGE32 and pKSE401. Transient transformation of tobacco with the cloned gRNA targeting the three CYP genes is in progress.
- About 759 nos. of tobacco germplasm accessions and 40 accessions of aswagandha were regenerated during this season. Based on morphological traits, 100 diversified germplasm accessions were identified for genome sequencing.
- A total of around 19 t of pure seed produced and supplied to farmers and about Rs. 2.0 crores of revenue generated during 2023-24.
- KDB-3 performed well under drought conditions with a yield potential of 1500 kg/ha cured leaf.
- For widening nutraceutical potential of chilli, three novel chilli lines (Dinhata Local 1, Jum Chilli Local 340-8, Dinhata Local 6) for black

colour (anthocyanin rich) and one variant (Chilli Local DIN 68-10) of violet colour were identified.

- In replicated yield trial (RYT I), two lines FCH-252 and FCH 256 were found to be superior by 26-31% and 18-31%, respectively over the checks in KLS. In AHT-II, only one entry, FCRH-11 was evaluated, and it was found superior by 10% over the checks for cured leaf yield.
- KRB 3 a high yielding and aphid tolerant line was identified



CROP MANAGEMENT

- Tobacco+ Bengal gram (0.6 m x 0.35m +2.5m) with 100% RDF gave higher system productivity based on tobacco leaf equivalent yield than other treatments.
- Turmeric + Blackgram (*Kharif*) - Tobacco (*Rabi*)-Ground nut relay cropping recorded higher net returns.
- Pre plant application of Sulfentrazone @ 0.25kg a.i/ha at 3 days before transplanting was found to be better in reducing weed population with highest weed control efficiency in FCV tobacco at both NLS and KLS.
- Identified a module for effective weed control in chilli which includes i) intercultural operation with power weeder ii) pre emergence application of pendimethalin (30 EC) 0.7 kg a.i. / ha + post emergence application of Quizalofop-ethyl 5% EC @0.06 kg a.i./ha.
- Turmeric rhizome yield of Megha 1 variety was found to be highest (17.5 t/ha) when planted in first week of April at a spacing of 30 cm x 30 cm in *Terai* region of West Bengal.
- Intercropping Ashwagandha with annual moringa increased the dry root yield by 7 % than with castor, tobacco, chilli and aggregatum onion.
- Optimized the manurial requirements for higher root yield of Ashwagandha (Sheep manure 2 tons + Azotobacter 10 kg/ha +PSB application 10 kg/ha).
- Customized fertilizers (basal 12-18-14-4.5-2.5 N-P-K-S-Ca; top dresser 17-0-17-9-0, N-P-K-S-Ca) along with micronutrients (Mg, Zn, B) has recorded significantly higher cured leaf yield to an extent of 15 percent, over the straight fertilizers under northern light soil condition.
- Boron fortified potassium schoenite (23.5 % potassium) has recorded green leaf and cured leaf yields at par with sulphate of potassium in both NLS and KLS conditions.
- Nano biotech capsules (12 capsules/ha) application in combination with 75 % RDF gave similar yield with that of 100 % RDF in FCV tobacco under KLS.
- Aphid population in tobacco crop commenced from 2nd week of February (1 per plant at 8DAT) and showed peak catches during 4th week of March (58 per plant at 51DAT), there after the population declined at CTRI, Rajahmundry.
- Black thrips population commenced from 3rd week of February (2 per plant) and showed peak catches during third week of March (64 per plant), thereafter the population declined.
- New nematicide, Fluopyrum 400 SC @0.05% reduced 60.0 and 41.9% in root knot disease incidence and soil nematode population respectively as compared to check.

Farm Mechanization

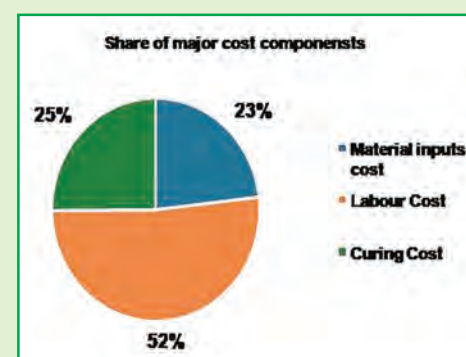
Need for Labour-Saving Technologies in FCV Tobacco Cultivation in India

(K. Viswanatha Reddy, M. Sheshu Madhav and L.K.Prasad)

- FCV tobacco is a commercial crop, an integral part of commerce, symbol of economic prosperity and livelihood security, with high-farm income generating potential. It is grown in limited pockets (1.4 ha) in the states of Andhra Pradesh and Karnataka with a production of 241 million kg during 2022-23. Among costs incurred by the farmers, it was found that the share of the material input cost was 23%, the share of labour cost was 52% whereas the remaining 24% was curing cost.
- This clearly infers that labour costs account for more than 50% of the cost in the NLS region and severe non-availability of skilled labour in FCV tobacco. Hence, possible deployment of labour-saving technologies in FCV tobacco, the cost can be brought down significantly by 21% in the labour cost component and by 11% in the total cost of cultivation. Thus, there is a need to develop labour-saving technologies in Indian FCV tobacco regions. Thus, this will create an impact on area coverage, time-saving, address the problem of a scarcity of skilled labour, and sustain tobacco farming in the long run.

ICAR-CTRI Technologies certified by Indian Council of Agricultural Research

S. No.	Name of the Technology	SMD	Lead Developer
1.	Leaf chemical quality index (LCQI) for assessment and seasonal monitoring of FCV tobacco quality	NRM	L. K. Prasad
2.	Soil Fertility Spatial Maps of Southern Light Soil (SLS) region of FCV Tobacco in Andhra Pradesh	NRM	L. K. Prasad
3.	Maize-tobacco: A profitable cropping system for higher system productivity and profitability in tobacco growing Vertisols	NRM	T. Kiran Kumar
4.	Integrated agro-technologies for weed and Orobanche management in chewing tobacco	NRM	M.Kumaresan
5.	Dense Planting Technique - A Strategy for Yield/Loss Minimisation under Delayed Monsoon Conditions in FCV tobacco grown on Rainfed Alfisols of Andhra Pradesh	NRM	M. Anuradha
6.	Novel Approach to Develop Sustainable Livelihood Security Indicators for West Coast Region of India	NRM	K. Viswanatha Reddy
7.	A simultaneous screening and quantitative method for the multi-residue analysis of pesticides in tobacco using ultra-high performance liquid chromatography-high resolution (Orbitrap) mass spectrometry	CS	Anindita Paul
8.	Non – Methanol based extraction method was developed for the estimation of nicotine, reducing sugars and chlorides in FCV tobacco leaf	CS	L.K. Prasad

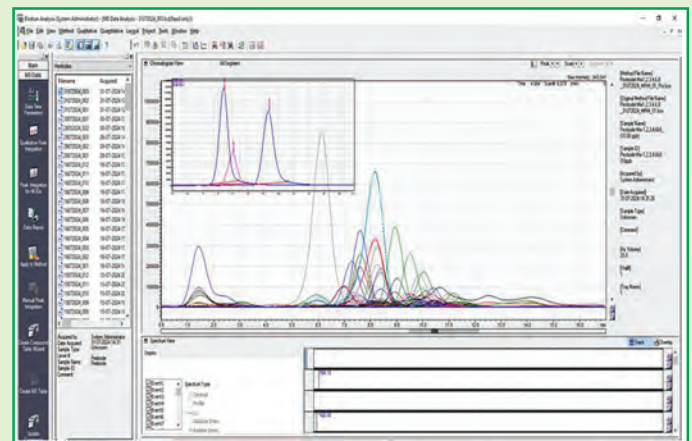


POST HARVEST AND VALUE ADDITION

- Shimadzu Ultra Fast Liquid Chromatograph Triple Quadrupole Mass Spectrometer (LC-MS/MS; LC-MS TQ-8045) instrument has installed and commissioning done. Residue Field Trial conducted with flupyradifurone insecticide as per CORESTA guidelines to know the PHI. Novel analytical method for multi pesticide residue and flupyradifurone pesticide in tobacco was developed in LC-MS/MS. (Anindita Paul)
- Chemo-profiling of chilli was done by GC-MS and LC-MS/MS instruments using targeted simultaneous approaches in view of sustainable waste valorization. Analytical method for estimating solanesol, TSNAs in tobacco; capsanthin, capsiate in chillies, novel synthesized suckericide were developed in LC-MS/MS and GC-MS respectively.
- Curcumin based milk/ beverage mix was developed with a nutritional content of 4.45 gm of protein, 2.86 gm of fats, 1.13 gm of fibre, 16.22 mg. of Iron, 1.05 mg of Zinc, 170 mg of Calcium, 2180 mg of Vitamin C and 61.2 mg of Vitamin D and 87.5% respondents scored high under sensory evaluation.
- Soil fertility status of Karnataka Light soils of FCV tobacco was assessed through spatial thematic maps of major, secondary and micro-nutrients. It showed that the organic carbon (0.37 %), available nitrogen (Mean: 122.0 kg/ha) were low. While available phosphorus (117.0 kg/ha) and available potassium were high (359.4 kg/ha) and accumulation of soil phosphorus was observed. Among micronutrients zinc was deficient with a mean value of 0.65 ppm.
- Microbes based technological intervention for yield and quality improvement of Chilli under *Terai* agro-ecological region of West Bengal were developed. Plant Growth Promoter, i.e. *Pseudomonas fluorescens*, along with RDF, increased yield to 24% over control.
- A collaborative research project in PPP mode was initiated with M.R. Bio-chem Private Limited on “Research, development and promotion of specialty chemicals for effective control of suckers, growth promoters and also plant nutrient supplements to enhance productivity” and a new molecule was synthesised as an alternative to the existing suckericide (Decanol) being used in the FCV tobacco. The synthesised chemical was tested with different concentrations in an experiment and as well as in farmer fields. It was found that 2.5% concentration is better than the 1.0 and 1.5 % concentrations.
- A collaborative contract research project with ICMR-NIN, Hyderabad on “Clinical evaluation of Safety of Tobacco seed oil Consumption among Human Population” was initiated. Phase-I study is planned for the population with an age group between 18-49 residing in the area of Health Nutrition and Demographic Surveillance System (HNDSS).
- Quantification of five marker compounds in the germplasm accessions of Ashwagandha (*Withania somnifera*) was started in collaboration with CSIR-IICT, Hyderabad to isolate the standard compounds and, develop HPLC analytical method for the identification and quantification of marker compounds.
- An econometric analysis was carried out to analyze four decades of export data to know the export potential and demand of Indian tobacco. The study helps in devising strategies for export-oriented production and expanding tobacco exports for Indian tobacco.
- FPOs involved in processing and value addition of turmeric in tribal areas were studied. The major constraints identified were low investment capacity, lack of infrastructure, poor access to institutional credit, market intermediaries, pre-fixation of price with buyers etc.



Newly installed and commissioned LC-MS/MS (LC-MS TQ-8045, Shimadzu)



Method development for estimating phytochemicals by LC-MS/MS

Foundation Day Celebrations

The ICAR-CTRI, with an outstanding contribution to tobacco farmers and stakeholder's prosperity has celebrated the 77th Foundation Day on 01-05-2024. Dr. Trilochan Mohapatra, Chairperson, PPV & FRA and Former Secretary, DARE & DG, ICAR, New Delhi, was the Chief Guest and Dr. R.C. Agrawal, Deputy Director General (Education), ICAR, was the eminent guest. Honorable guests have lauded the institute's remarkable journey since its inception in 1947. Dr. K. Padma Raju, Vice Chancellor, Adikavi Nannaya University, Rajahmundry; Dr. R. Sarada Jayalakshmi Devi, Vice Chancellor, ANGRAU; Dr. T. Janakiram, Vice Chancellor, Dr. YSRHU; Dr. K. Suresh, Director, ICAR-IIOPR were the guests from other reputed institutions for the 77th Foundation Day.



R & D COLLABORATIONS

- ICAR-CTRI inked MoUs with Sri Konda Laxman Telangana State Horticultural University (SKLTSHU), Mulugu, Telangana; Mangalayatan University Jabalpur, Madhya Pradesh; Siksha 'O' Anusandhan Deemed to be University, Khandagiri, Bhubaneswar and UBKV, Pundibari, Cooch Behar, West Bengal.
- ICAR-CTRI and M/s. Kalaga Herbal Research Labs Private Limited, Hyderabad for developing 'Nutraceutical food supplements through turmeric and ashwagandha in PPP mode on 04.04.2024
- ICAR-CTRI and Syngenta India Pvt Ltd for testing 'Bioefficacy of new generation insecticide combinations' on 31.5.2024.



MoU with M/s. Kalaga Herbal Research Labs Private Limited



MoU with Syngenta India Pvt Ltd

MEETINGS/ TRAININGS/ SEMINARS

- The ITMU of ICAR-CTRI organised Sensitization Workshop on 'Protection of Plant Varieties and Farmers' Rights Authority' on 19.01.2024 and Institute-Industry Meet on Technology Commercialization was organized at ICAR-CTRI, Rajahmundry on 15.03.2024.
- Field IRC Meet of ICAR-CTRI was organized on 24.01.2024 at ICAR-CTRI RS, Jeelugumilli
- World Intellectual Property Day was celebrated by ICAR-CTRI on 26.04.2024
- A five-week Orientation Training Programme for the newly joined Technicians (T-1) of the Institute at ICAR-CTRI, Rajahmundry from 27.5.24 to 28.6.24 was conducted.
- ICAR-CTRI, Rajahmundry organized 58th Institutional Management Committee meeting on 13.6.2024
- Institutional BioSafety Committee (IBSC) meeting of ICAR-CTRI was held on 21.6.2024 at the institute under the Chairmanship of Dr. M. Sheshu Madhav, Chairman, IBSC, and Director, ICAR-CTRI.



Awards and Recognitions

- **Dr. M. Sheshu Madhav**, Director conferred prestigious 'Fellow of National Academy of Agricultural Sciences (FNAAS)' under crop science category for his outstanding contributions in cutting edge Biotechnological tools led to products, technologies and research publications. All his work of more than two decades helped in sustainable Rice and Tobacco production. The award was bestowed by Dr. Himanshu Pathak, President NAAS, Secretary, DARE & DG, ICAR during 31st Annual General Body Meeting held at NASC Complex, ICAR, New Delhi on 5th June 2024.
- **Dr L.K. Prasad**, Head, Division of PH & VA, conferred best reviewer of the year, 2024 by Current World Environment Journal.

Indian Society of Tobacco Science Awards

- **Dr. M. Sheshu Madhav**, Director, ICAR-CTRI - Fellow- Biennium 2021-2022
- **Dr. S.V.Krishna Reddy**, Principal Scientist, ICAR-CTRI – Fellow-Biennium 2019-20
- **Dr. H. Ravisankar**, Principal Scientist, ICAR-CTRI – Fellow-Biennium 2021-2022
- **Dr. M. Kumaresan**, Principal Scientist & Head i/c, CTRI RS, Veda sandur - Fellow -Biennium 2019-20
- **Dr. S. Ramakrishnan**, Principal Scientist & Head i/c, CTRI RS, Hunsur - Fellow -Biennium 2019-20
- **Dr. K. Prabhakara Rao**, Senior Scientist, ICAR-CTRI - Outstanding Scientist Award -Biennium 2019-20
- **Dr. T. Kiran Kumar**, Senior Scientist, ICAR-CTRI - Outstanding Scientist Award -Biennium 2021-22
- **Sri K. Viswanatha Reddy**, Scientist, ICAR-CTRI - Young Scientist Award-Biennium 2019-20
- **Dr. B. Hema**, Scientist, ICAR-CTRI - Young Scientist Award - Biennium 2021-22



Dr. M. Sheshu Madhav
NAAS Fellow



Dr. M. Sheshu Madhav
ISTS Fellow



Dr. S.V.Krishna Reddy



Dr. H. Ravisankar



Dr. M. Kumaresan



Dr. S. Ramakrishnan



Dr. K. Prabhakara Rao



Dr. T. Kiran Kumar



Sri K. Viswanatha Reddy



Dr. B. Hema

FSSAI certification

FSSAI certification was obtained for a health supplement developed from *Turmeric* and *Aswagandha*.

Form C
Government of India
Food Safety and Standards Authority of India
License under FSS Act, 2006

1. Name & Registered Office Address of Licensee / अर्जाकर्ता का नाम और पता
ICAR-CTRI
ICAR-CTRI GOVT OF INDIA, BHADRAK
NAGAR, RAJAHMUNDRY (Rajahmundry), Andhra Pradesh-533105

2. Address of Authorized Premises / अर्जाकर्ता का पता
DIRECTOR, ICAR-CTRI GOVT OF INDIA,
BHADRAK NAGAR, RAJAHMUNDRY,
Rajahmundry (Urban), East Godavari Dist
(Rajahmundry), Andhra Pradesh-533105
Manufacturer - Proprietary Food

3. Kind of Business / अर्जाकर्ता का व्यवसाय
Manufacturer - Proprietary Food

4. Dairy Business Details / डेयरी व्यवसाय के विवरण
No

5. Category of License / अर्जाकर्ता का लाइसेंस
Central License

Place / स्थान: FSSAI Office
Issued On / दिनांक: 29-04-2024 (New License)
Valid Until / समाप्त: 29-04-2027 (Four months, before Announced)

Designated Officer / निर्दिष्ट अधिकारी
Date: 11/03/24
Verified by / जांचक: 940000044
License Grant Date: 29-04-2024 14:49:19
License Issued On: 29-04-2024 15:09:25

Annexure:
1. Checklist Attachment
2. Validity Attachment
3. Non-Food C Attachment
4. Condition of License

Page 1 of 2

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Foreign visit

Dr. M. Sheshu Madhav, Director, ICAR-CTRI participated in the 39th meeting of ISO/TC-126 "Tobacco & Tobacco Products and its working bodies" as part of the Leader of Indian Delegation in Catania, Italy during 9-13 April, 2024.



Technology Outreach

- Training programmes on 'Good Agricultural Practices for FCV Tobacco' was conducted to the technical staff of Tobacco Board on 10.01.2024 at CTRI RS, Jeelugumilli and 18.01.2024 at CTRI RS, Kandukur
- Scientist and Technical personnel participated in the Field Friends Programmes in rainfed alfisols of Andhra Pradesh on 10-11 & 30-31 January, 2024
- Conducted training on 'Post Harvest Management in Burley Tobacco' at Chilakaluripet, A.P. to 230 field technicians of GPI Ltd. Ongole on 2.2.2024
- Organized meeting with the farmers at Petla village, West Bengal on 07.02.2024 and discussed about integrated plant nutrient management in tobacco
- Conducted a Field Day for demonstration of FCV tobacco variety FCJ-11 at Markandeya Puram Village near Jangareddygudem, A.P. in the farmers field on 8.2.2024
- Farmers day was celebrated on 14.02.2024 and Ashwagandha day was celebrated on 6.3.2024 at ICAR-CTRI RS, Veda sandur, Tamil Nadu
- Conducted tobacco Field Day on 15.02.24 at Okrabari village, West Bengal and explained farmers about released tobacco varieties, production technology and plant protection measures for growing healthy crop
- 'Tobacco Leaves Stringing machine' was demonstrated at ICAR-CTRI RS, Kandukur, AP during 6-7 March, 2024
- Training programmes were conducted to the FCV growers of Periyapana and Mysuru regions during 5-6 March, 2024 and for Kachuvinahally and Karnakuppe regions on 7.05.2024 at ICAR-CTRI RS, Hunsur, Karnataka
- Tobacco and Ashwagandha Field Day was conducted at CTRI RS, Veda sandur, Tamil Nadu on 21.03.2024



Field Day on FCV tobacco variety FCJ-11



Training on Post Harvest Management in Burley Tobacco

SCSP/ TSP Programmes

ICAR-CTRI implemented SCSP and TSP programmes at Head quarters and research stations. Different capacity building programmes were conducted and critical inputs were distributed to the beneficiaries



SCSP at ICAR-CTRI BSR Farm, Katheru



SCSP at ICAR-CTRI RS, Hunsur



TSP at ICAR-CTRI RS, Jeelugumilli



TSP at ICAR-CTRI RS, Dinhat

KRISHI VIGYAN KENDRAS

KVK, Kalavacharla

- ICAR-CTRI, Rajahmundry hosted the Annual Zonal Review Workshop of KVKs of Zone X (Andhra Pradesh, Telangana, Tamil Nadu and Puducherry) from 25-27 June, 2024. This programme was jointly organized by ICAR-CTRI (NIRCA), ICAR-ATARI Zone X, Hyderabad and Dr.YSRHU, Venkataramannagudem.
- 'Farmers Awareness Programme' on 'Cultivation of Medicinal and Aromatic Plants, Primary Processing and Value Addition' was organized on 16.02.2024
- Scientific Advisory Committee Meeting was conducted on 09.05.2024.



KVK, Kandukur

- Organized training programme to natural farming practicing farmers at KVK, Kandukur on 03.01.2024.
- Capacity building programme to in-service personnel RBK VAAs, VHAs, VVAs, MPEOs, and VEOs on GAPS in pulses and oilseeds was conducted on 23.1.2024.
- In collaboration with DRC, ATMA, Ongole organized Farmers-Scientist interaction meeting on 14.02.2024.
- Scientific Advisory Committee (SAC) meeting was conducted on 07.03.2024



VISITORS

Nazeer Ahmed, Marketing Advisor for AP Govt. visited ICAR CTRI RS, Guntur on 22.3.2024



Dr. Alagu Sundaram, Former DDG (Ag.Eng.), ICAR visited ICAR-CTRI RS, Veda sandur on 5.4.2024



Dr. Prasanta Kumar Dash, ADG (CC), ICAR attended IMC and visited the BSR farm Katheru Rajahmundry on 13.6.2024



PERSONNEL

Appointments

Subject Matter Specialists (T-6)

Name	Date of Joining
Sri Mayank	28.05.2024
Ms. B. Neeharika	30.05.2024
Sri B. Nageswara Reddy	30.05.2024
Sri Vivek Rajesh Kamat	10.06.2024
Ms. Jyoti Jadipujari	10.06.2024
Sri N.V. Raghunandan	10.06.2024
Sri K.R. Sriranga	12.06.2024
Sri Sanjay Vinayak Hegde	12.06.2024
Sri I. Venkatesh	14.06.2024

Technicians (T-1)

Name	Date of Joining
Sri K. Mohan Babu	19.04.2024
Sri Rajat Malik	25.04.2024
Sri Ajit	25.04.2024
Sri D. Devanand	26.04.2024
Sri Vikash Kumar	03.05.2024
Sri Indrjeet	03.05.2024
Sri Saurabh Kumar	08.05.2024
Sri Krishna Chandra	08.05.2024
Sri Pankaj Kumar	09.05.2024
Sri Himanshu Yadav	09.05.2024

Retirements

Name & Designation	Date
Sri S. Rama Raju Senior Technical Assistant	04.01.2024
Smt. Mamataj Begum Assistant	31.01.2024
Sri N. Srinivasa Rao, SSS	31.01.2024
Sri R. Rajendran Senior Technical Officer	31.03.2024
Sri K. Venkanna, SSS	30.04.2024
Sri M. Mahadevaswamy Principal Scientist	31.05.2024
Sri A. Daniel Raju Technician	31.05.2024