



Indian Council of  
Forestry Research  
and Education

# ICFRE NEWSLETTER



Vol. 23 No. 11

November 2023

## JANJATIYA GAURAV DIVAS

3<sup>rd</sup> Janjatiya Gaurav Divas was celebrated by ICFRE, Dehradun and its institutes on 148<sup>th</sup> birth anniversary of Bhagwan Birsa Munda from 15<sup>th</sup> to 26<sup>th</sup> November 2023.



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## CONSTITUTION DAY

ICFRE and its institutions celebrated Indian Constitution Day on 26<sup>th</sup> November 2023.



## ACTIVITIES PERFORMED UNDER MISSION LIFE

### ICFRE- Institute of Forest Productivity

ICFRE-IFP, Ranchi conducted a training on Lac Cultivation for the forest officials at Godda, Jharkhand



Lac Cultivation Training

### ICFRE- Institute of Forest Genetics & Tree Breeding, Coimbatore (IFGTB)

ICFRE-IFGTB distributed awareness material pertaining to Mission Life to various school students



Distribution of awareness material pertaining to Mission Life

### ICFRE-Himalayan Forest Research Institute, Shimla

ICFRE-HFRI, Shimla delivered a lecture on Traditional Herbs and Medicinal plants at Narkanda



Lecture on traditional Herbs and Medical Plants

### ICFRE, Dehradun

ICFRE employees encourages use of discarded plastic bottles as flower pots.



The Plastic bottles are being used as flower pots

### ICFRE-Forest Research Institute, Dehradun

Awareness lecture about Mission LiFE was delivered to 152 girls students from 10 zones of KV



Awareness lecture to students from 10 zones of KV

### ICFRE-Institute of Wood Science and Technology, Bengaluru

ICFRE-IWST, organised a sensitization programme on Mission LiFE and pledge was taken by 47 State Forest Service officer trainees of CASFOS, Burnihat, Assam



Sensitization programme on Mission LIFE and pledge was taken by 47 State Forest Service officer trainees of CASFOS, Burnihat, Assam at ICFRE-IWST

## SIGNIFICANT RESEARCH FINDINGS

### ICFRE-Forest Research Institute, Dehradun

Stability of the natural colorant derived from wild grown *Punica granatum* in milk and beverages was examined and found to be stable for use in these products.

### ICFRE-Himalayan Forest Research Institute, Shimla

Mass inoculum of *Trichoderma asperellum* was successfully produced on the dropped out needles of *Pinus roxburghii*. *Trichoderma asperellum* exhibits significant antifungal properties against a variety of phytopathogens. Its cultivation on pine needles will serve two purposes: turning forest waste into biopesticide formulation and reducing the availability of pine needles for forest fires.

### ICFRE-Rain Forest Research Institute(RFRI)

Optimized propagation techniques utilizing stumps in *Aquilaria malaccensis*.

### ICFRE- Institute of Forest Genetics & Tree Breeding, Coimbatore (IFGTB)

- MicroRNAs (miRNAs) are 21-24 nucleotides long non-coding molecules that regulate gene expression in plants. The role of miRNA in regulating the sesquiterpene biosynthesis pathway in *Santalum album* was investigated using an integrated analysis of wood transcriptome and small RNA dataset. It predicted 69 miRNA members belonging to 12 families that targeted 12 transcripts from the sesquiterpene pathway, with a maximum of 24 miRNAs regulating cytochrome P450 reductase, followed by sesquisabinene synthase 1, which was targeted by 23 miRNAs. This study provides the first crucial insight into the post-transcriptional regulation of the sesquiterpene pathway genes in the genus *Santalum* and opens up a new perspective in metabolite engineering for enhanced essential oil production in sandalwood.
- Molecular docking studies of the identified antiviral compounds *bufotalin*, *colchicine*, *scillarenin*, *phytol*,  $\alpha$ -*amyrin*, *quinine*, *gamma-sitosterol*, *lupeol*, *campesterol* and *stigmasterol* against the target proteins, Angiotensin Converting Enzyme -2 (ACE2), trans membrane protease serine 2 (TMPRSS2), 3C-like protease (3CLpro), papain like protease (PLpro), RNA Dependent RNA polymerase (RdRP) revealed  $\alpha$ -*amyrin* as the most potential compound. It had the highest docking score of -13.4 against the protein 3CLpro and -11.8 against TMPRSS2. Stigmasterol had the strong docking scores against 4 target proteins namely ACE2, 3CLpro, PLpro and RdRP. Based on the results, it is deduced that stigmasterol could be promising lead compound for antiviral activity.

## CONSULTANCIES

### Indian Council of Forestry Research and Education, Dehradun

Works on different scientific consultancy projects was undertaken and following reports were submitted to respective agencies during the period:

#### Reports Submitted:

- Environmental Audit report of New Majri UG to OC Coal Mine of WCL submitted to M/s CIL.
- Eco-restoration study of mined out and surrounding areas of Gouthamkhani OC Coal mine to SCCL, Hyderabad.
- Monitoring and Evaluation of Reclamation and Rehabilitation (R&R) Plan activities in John Iron Ore Mine (ML No. 2294) of Shri. R. Praveen Chandra, M/s. ERM Group of Companies, Chitradurga, Karnataka submitted to M/s. Shri. R. Praveen Chandra, ERM Group of Companies.
- Revised Biodiversity Conservation and Wildlife Management Plan of Kutehr HEP (240MW) submitted to JSW Energy (Kutehr)Ltd.

## PARTICIPATION IN EXHIBITION

- ICFRE-IWST installed a display stall and participated in Krishi Mela 2023 organized by University of Agricultural Sciences at GKVK Campus Bangalore



ICFRE-IWST Bangalore installed a stall in Krishi Mela 2023

- RFRI, Jorhat installed a stall in the 'Farmers' Fair' organized by AAU-Assam Rice Research Institute, Titabar on 1<sup>st</sup> November 2023 and showcased various R&D activities of the Institute.



ICFRE-RFRI, Jorhat stall in Farmers Fair at Titabar

# ICFRE NEWLETTER 2023

## Activities under Van Vigyan Kendras

- ICFRE-HFRI, Shimla distributed seedlings of medicinal plant *Bergenia ciliata*, *Ajuga integrifolia*, *Picrorhiza kurroa*, *Valeriana jatamansi*, *Podophyllum hexandrum*, *Angelica glauca*, *Plantago major*, *Acorus calamus*, *Bistorta affinis* etc. on 16 November 2023.
- Fifteen volunteers of NCC from Government Senior Secondary School, Jagatsukh visited Van Vigyan Kendra cum Regional Research Station, Jagatsukh, Manali, Kullu HP on 22<sup>nd</sup> November 2023. They were given information about the cultivation and uses of various medicinal herbs like Karu, Patish, Chora and Vanakkadi. Apart from this, they were also made aware about the importance of environmental protection (Mission LiFe), AmritSarovar Scheme and afforestation



15 volunteers of NCC of Government Senior Secondary School Jagatsukh visited Forest Science Center Jagatsukh, Manali



ICFRE-HFRI, Shimla distributed seeding of medical plant

## WORKSHOPS/SEMINARS/MEETINGS

### ICFRE-Forest Research Institute, Dehradun

- 1 National Collaborative Scheme on Forest Fire Management. 29<sup>th</sup> November 2023 Officers, Scientists, Technical staff, Ph.D. scholars, Project staff actively participated in the workshop.



ICFRE- Forest Research Institute organized a Consultation Workshop under the “National Collaborative Scheme on Forest Fire Management”.

### ICFRE- Himalayan Forest Research Institute, Shimla

- 2 Research Project Review (Projects under PLAN, EAP & AICRPs) Meeting 30<sup>th</sup> November 2023 All Scientists/PIs of the projects

### ICFRE- Tropical Forest Research Institute, Jabalpur

- 3 Hindi Karyashala 21<sup>st</sup> November 2023 Director, Heads and Incharge of sections and Hindi Officer

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## TRAINING PROGRAMMES

### ICFRE-Forest Research Institute, Dehradun

- |                          |   |  |
|--------------------------|---|--|
| 1 Plywood Manufacture    | 06 <sup>th</sup> to 10 <sup>th</sup><br>November 2023 | About 20 participants from plywood Industries and Heads of Divisions of FRI, officers and scientists of FRI and students of FRI deemed university. |
| 2 R-statistical software | 20 <sup>th</sup> to 24 <sup>th</sup><br>November 2023 | Technical staff, Ph.D. scholars, Project staff actively participated in training/workshop.   |

### ICFRE- Himalayan Forest Research Institute, Shimla

- |   |   |  |
|---|---|--|
| 3 Cultivation of Important Medicinal Plants: An Option for Diversification and Additional Source for Rural Income | 06 <sup>th</sup> to 08 <sup>th</sup><br>November 2023 | 30 Eco Task Force officers, vaidyas, SHGs, Gram Panchayat Representatives, NGO, Ayurvedic Doctor, School Principals, Teaching staff, Newspaper reporters |
| 4 Forestry and Silviculture of Important Forestry Species   | 20 <sup>th</sup> to 25 <sup>th</sup><br>November 2023 | 40 Officers and soldiers of Eco Task Force of Jammu and Kashmir Light Infantry and Dogra Regiment  |
| 5 Application of Bio- Fertilizers and Bio-pesticides in Forestry Practices  | 22 <sup>nd</sup> to 24 <sup>th</sup><br>November 2023 | 30 Stakeholders viz. Eco Task force, Horticulture and Agriculture Department, HIMORD Organics, IARI, Shimla and Members from Gram Panchayat Pujarali     |
| 6 Seed Traits and Soil Seed Bank Dynamics in Forest Ecosystems: Implications for Forest Biodiversity Conservation | 30 <sup>th</sup> November<br>2023                     | 45 participants including Scientists, Technical staff, Research staff ICFRE-HFRI   |



ICFRE- FRI, Dehradun organized five days short term training course on "Plywood Manufacture"



ICFRE-HFRI Shimla is organized a training programme on cultivation of important temperate medicinal plants

### ICFRE-Institute of Wood Science and Technology, Bengaluru

- |  |   |  |
|--|---|--|
| 7 Wood Technology  | 01 <sup>st</sup> to 02 <sup>th</sup><br>November 2023 | 55 State Forest Service Officer trainees of CASFOS, Coimbatore         |
| 8 Bamboo Processing and Utilization  | 06 <sup>th</sup> to 08 <sup>th</sup><br>November 2023 | 32 Entrepreneurs, researchers, academicians, farmers, students         |
| 9 Short term training on Wood Seasoning and Preservation                         | 20 <sup>th</sup> to 24 <sup>th</sup><br>November 2023 | 22 Foresters and Range Forest Officers of Tamilnadu Forest Department. |
| 10 Plywood, block boards, resin and flush door as per relevant Indian Standards. | 24 <sup>th</sup> November<br>2023                     | 15 Quality control personnel of wood based panel product industries.   |

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## ICFRE-Rain Forest Research Institute, Jorhat

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|---|---|--|
| 11 Skill Development Training on Biofertilizer Production                 | 01 <sup>st</sup> to 05 <sup>th</sup><br>November 2023 | 35 B.Sc. students from Botany Department of J.B. college, Jorhat participated. |
| 12 Nursery Management with special reference to Bamboo Nursery Management | 6 <sup>th</sup> November<br>2023                      | 30 villagers participated in the day-long programme                            |
| 13 Bamboo and Other Forest Based Livelihood Opportunities                 | 20 <sup>th</sup> November<br>2023                     | 12 participants from Majuli  |



ICFRE-RFRI Conducted a Skill Development Training on Biofertilizer Production



ICFRE-RFRI Conducted a Training on Bamboo Nursery Management

## ICFRE-Institute Of Forest Genetics & Tree Breeding, Coimbatore

- |   |   |   |
|---|---|---|
| 14 Biodiversity Conservation & Nature Education | 07 <sup>th</sup> to 09 <sup>th</sup><br>November 2023 | 30 Science teachers of Government schools from Coimbatore district. |
|---|---|---|

## ICFRE-Institute Of Forest Productivity, Ranchi

- |   |                                   |                             |
|---|-----------------------------------|-----------------------------|
| 15 Organized three-days training programme in Godda Forest Division on the topic “Lac Production” | 02 <sup>nd</sup> November<br>2023 | 51 Farmers from 20 villages |
|---|-----------------------------------|-----------------------------|

### MEMORANDUM OF UNDERSTANDING

Memorandum of Understand (MoU) was signed on 21<sup>st</sup> November 2023 between ICFRE- Institute of Wood Science and Technology, Bangalore and Central Pulp and Paper Research Institute , Saharanpur for academic and research collaborations.

ICFRE-RFRI, Jorhat, Assam signed a Memorandum of Understanding with Botany Department of Sibsagar Girls' College, Sivasagar, Assam on 3<sup>rd</sup> November, 2023. It was signed by Dr. Nitin Kulkarni, Director, ICFRE-RFRI and Mrs. Nibedita Baruah, Head, Botany Department in presence of Scientists, Officers, Teachers and Students.



MoU signed between ICFRE- IWST and CPPRI , Saharanpur



MoU signed between ICFRE- RFRI and Sibsagar Girls' College, Jorhat

- MoUs were signed between ICFRE-IFGTB & Devleela Biotechs, Raipur, HiFi Biotech Pvt Ltd, Salem and Sree Adithya Biotech, Bengaluru for mass multiplication of tissue culture protocol for teak.
- CFRE-IFGTB entered MoU with Yuvakshethra Institute of Management Studies (YIMS), Mundur, Kerala. The MoU focuses on research collaboration, encourages students to take up projects, and ensures customised training opportunities.
- A group of 435 students with 4 teachers from K V, BSF Jodhpur, P. M. Shree K V, Jalapi Chawani, Barmer and P. M. Shree K V, Airforce, Jodhpur, visited the Interpretation Centre of ICFRE-AFRI on 21<sup>st</sup> and 22<sup>nd</sup> November 2023. A short documentary on the institute's research shown to students and acquired the knowledge about different research activities of the institute.

## PRAKRITI PROGRAMME

### ICFRE-Arid Forest Research Institute, Jodhpur

- A group of 346 students (VII<sup>th</sup>, IX<sup>th</sup>, IX<sup>th</sup> and XII<sup>th</sup>) with 15 teachers from K V, Banad, Jodhpur, visited the Interpretation Centre of ICFRE-AFRI on 6<sup>th</sup> and 8<sup>th</sup> November 2023. A short documentary on the institute's research and process of making compost from Neem leaves was shown to students.
- 110 students of Kendriya Vidyalaya, No.1, Army, Ratanada, Jodhpur visited ICFRE-AFRI on 7<sup>th</sup> November 2023 respectively and lectures on Sustainable Development were delivered to the students.
- A group of 115 Students (Class IX to X) with 4 teachers from P M Shree Kendriya Vidyalaya, BSF, Jodhpur visited the Interpretation Centre, ICFRE-AFRI On 9<sup>th</sup> November 2023.. Students acquired the information about forestry research activities of the institute.
- A lecture was delivered on "Sustainable Development" to about group of 1500 students of Kendriya Vidyalaya No. 1, Army, Kent Military Area, Jodhpur under the Prakriti & P. M. Shree Scheme on 20/11/2023.



Lecture was delivered on Sustainable Development to students of KV Jodhpur



Students from KV, BSF Jodhpur visited ICFRE-AFRI, Jodhpur

### ICFRE-Himalayan Forest Research Institute

- 15 students of NCC Volunteers from Government Senior Secondary School to Jagatsukh Van Vigyan Kendras cum Regional Research Station, Jagatsukh, Manali, Kullu HP were apprised about herbal plants and environment protection on 22 November 2023.
- 70 students of GSSS Beolia, Shimla were apprised about environment conservation on 23 November 2023.



NCC Volunteers from GSSS Jagatsukh were apprised about herbal plants and environment protection at VVK, Manali,

### ICFRE-Institute of Forest Genetics & Breeding, Coimbatore

- About 1485 school students of Akshaya Academy Coimbatore, Bharathiya Vidhya Bhavan Public School, Anjannur, ONGC public School, Karaikal, Kendriya Vidhyalaya, Coimbatore, Government Higher Secondary School, Sundapalayam, Air Force School, Sulur visited ICFRE-IFGTB on 03, 16, 17, 22, 23, 28, 29 and 30 November 2023 respectively and lectures on Environmental Science, Desert Ecosystem, Useful insects, Importance of Tree Cultivation, Over view of Indian Forest, Medicinal plants and herbal garden, Deforestation and its impact, Indian forest and Organic Farming were delivered to the students.

## ICFRE- Institute of Wood Science and Technology, Banagluru

- About 34 B. Sc (Forestry) students with 2 faculty from Kerala Agricultural University, College of Forestry visited Tissue Culture Lab, Xylarium, Wood workshop, Advanced Woodworking Training Centre, at ICFRE-IWST Bangalore on 17 November 2023.

## ICFRE-Institute fo Forest Biodivercity, Hyderabad

- ICFRE-IFB, organized a programme on Sustainable Development on 15<sup>th</sup> and 17<sup>th</sup> November 2023. A group of 150 students of Kendriya Vidyalaya, Hakimpet, Telangana and Kendriya Vidyalaya, Begumpet, Telangana including teachers were present in the programme.



ICFRE-IFB, organized a programme on Sustainable Development

### AWARENESS AND DEMONSTRATION PROGRAMME

## ICFRE-Arid Forest Research Institute, Jodhpur

- A group of 30 Forester Trainees from P.T.I. Pinjore visited the Interpretation Centre of ICFRE-AFRI. They were explained about the research activities of the institute. A short documentary on the institute's research was shown to the foresters. Trainees also visited VMG of Shisham Clones on 6<sup>th</sup> November 2023.
- On 16/11/2023, Mr. Balthazar K. Nyamyusya, Curator in-charge, National MajiMaji Memorial Museum, Tanzania and Sh. Kuldeep Kothari, Secretary, Rupayan Sansthan, visited ICFRE-AFRI. Director presented about the history, mandate, objectives, and research highlights of the institute. Dignitaries also visited the Interpretation Centre, VMG of Shisham clone, and Thar Shobha Khejri trial.

## ICFRE-Tropical Forest Research Institute, Jabalpur

- TFRI technologies were demonstrated to 49 Forest Guard from Forest Ranger Collage Balaghat (M.P.) and 367 Student of PM Kendriya Vidhyalaya Jabalpur, Gyan Ganga Institute of Technology & Science, Jabalpur(M.P.), Hitkarini Collage of Pharmacy Jabalpur, on 3<sup>rd</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 28<sup>th</sup> November 2023.



TFRI technologies were demonstrated to 49 Forest Guard from Forest Ranger Collage Balaghat (M.P.) and 367 Student of PM Kendriya Vidhyalaya Jabalpur

## ICFRE-Institute of Forest Biodivercity, Hyderabad

- ICFRE-CEC, Vishkapatanam, conducted a Tidal Walk Program along with WCTRE- Wildlife Conservation through Research and Education (NGO). Participates were explained about different marine organisms, importance of mangrove and biodiversity of the tidal pollution on 04.11.2023. There were overall 20 participants in the program.
- An institutional visit was arranged for 12<sup>th</sup> standard students from Sri. Kasyap Junior College on 22.11.2023. They were shown interpretation center. A small brief explanation about the various projects carried out in the centre was explained. A total of 40 students visited the centre.

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## ICFRE-Institute of Wood Science and Technology, Bengaluru

- About 47 State Forest Service officer trainees of CASFOS, Burnihat, Assam visited Tissue culture Lab, Wood Anatomy Lab Wood Museum & AWTC on 22<sup>nd</sup> November 2023
- Participated in an Inter-institutional discussion between IWST and NCBS on 02/11/2023, where, some of the contribution from Forest Protection Division, IWST was importance of role of native microbes to ascertain the originality of logs of seized Red Sanders, significance of soil microbes in determining the wood traits and forest microbiome.



SFS trainees of CASFOS, Burnihat, Assam visited IWST Bengaluru

## ICFRE-Institute of Forest Productivity,Ranchi

- West Bengal Forest School, Dow Hill, Kurseong organized a programme on Training and Capacity Building of Other Stakeholders at NIC sponsored by the Ministry of Environment, Forest and Climate Change, Govt. of India on 2<sup>nd</sup> November 2023.
- A special lecture to Forest officials on “Analyzing Forest policies for its effect on Forest productivity and Livelihood” was delivered in a workshop organised by the Forest Deptt, GoJ at Palash Hall, Forest Deptt. Ranchi on 4<sup>th</sup> November 2023.

## RAJBHASHA ACTIVITY

ICFRE-Forest Research Institute, Dehradun organised one day hindi training workshop on the topic "Official Language Rules/Acts and Quarterly Report" on 22 November 2023.



ICFRE-Forest Research Institute, Dehradun organised one day hindi training workshop

## MISCELLANEOUS

- Vigilance Awareness Week was observed from 16 August 2023 -15 November 2023 by ICFRE institutes.
- All staff of ICFRE-IWST IPIRTI Campus and Field Station Kolkata took “Rastriya Ekta Diwas Pledge” on 31.10.2023 State Formation Day, Karnataka Rajyotsava was celebrated by ICFRE-IWST, Bangalore with great enthusiasm on 1st November 2023. Prizes were distributed to the winners of competitions followed by cultural program by staff and students.

## HR NEWS

### Appointment Regular

#### Name of Officer

#### Date

Sh. Narendra Babu S., IFS  
(KL:2012), DCF, ICFRE-  
IFGTB, Coimbatore

28.11.2023

# ICFRE NEWLETTER 2023

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