



# ICFRE-RFRI NEWSLETTER

Vol-1

Issue-1 (October-December, 2023)

## From the Director's Desk



**ICFRE-Rain Forest Research Institute (ICFRE-RFRI)** is one of the nine Research Institutes of Indian Council of Forestry Research and Education (ICFRE) which is an autonomous body under the Ministry of Environment, Forest and Climate Change, Government of India and is premier research organisation in the National Forestry Research System.

ICFRE-RFRI began its journey in 1976 as the Research Centre of FRI and Colleges, Dehradun, attached to the State Forest Service College, Burnihat for documenting the flora and fauna of the North-Eastern (NE) region. The centre was upgraded to an institute and relocated to Jorhat, as the Institute of Rain and Moist Deciduous Forest Research (IRMDFR) in 1988. The Institute was renamed as Rain Forest Research Institute in 2002.

The institute along with its two satellite centres – **ICFRE-Bamboo and Rattan Centre (ICFRE-BRC) Aizawl** and **ICFRE-Livelihood Extension Centre (ICFRE-LEC) Agartala** has established themselves as a major centre for research on forestry & ecology related issues to extend knowledge through research, education and extension in general and to support forestry research in North-Eastern states.

The institute has evolved into one of repute, delivering innovative service in the field of forestry resources and technology extension to all NE states including Sikkim. The focus is on documentation of biodiversity in the relatively unexplored area, especially of lower plants and soil microbes. Since this region is rich in bamboo diversity with more than 90 species and is also the centre of origin of many woody bamboos, the institute devotes much of its resources in selection of high yielding fast growing clumps for mass multiplication and distribution, study on pests and disease of bamboo and various value addition activities. Since the region is also the native distribution range of agarwood, the most expensive forest produce, in the world, considerable research is done on the genetic diversity of agarwood, its artificial inoculation for production of agar resin etc. The multidisciplinary scientific power of the institute delivers need based technological achievements in forest science leading towards conservation, protection, restoration and management of forest resources. The tested technologies developed under different research projects, are transferred to the stakeholders through its Regional Capacity Building Programs under Demo Village and Van Vigyan Kendras (VVKs) in the states.

I am delighted to address you on this momentous occasion as we prepare to unveil the inaugural issue of the ICFRE-RFRI Newsletter which is a testament to our commitment to sharing our discoveries,

achievements and insights with all stakeholders. The 1st issue showcases different activities of ICFRE-RFRI, Jorhat during October-December, 2023.

As we embark on this exciting journey of communication and collaboration, I extend my deepest gratitude to all those who have contributed to the creation of this newsletter. Their dedication and collaboration have been instrumental in shaping this platform into a valuable resource for information and inspiration.

I am confident that RFRI Newsletter will serve as a beacon of information on institutional research and extension activities and will be helpful for researchers, stakeholders and policy planners concerned with forestry research. I encourage each of you to actively engage with the newsletter-share your thoughts, insights

(Dr. Nitin Kulkarni)  
Director, ICFRE-RFRI, Jorhat

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## Significant Research Achievements

ICFRE-RFRI, Jorhat has reported a macro fungus named *Galiella rufa* from ICFRE-RFRI, Jorhat campus which is a new distribution record for Assam.



ICFRE-RFRI, Jorhat has optimized propagation techniques utilizing stumps in *Aquilaria malaccensis*.





## *Significant Research Achievements*

Enumerated 183 woody plant species (163 trees and 20 shrubs) from Dehing Patkai National Park (NP), representing 122 genera and 58 families.



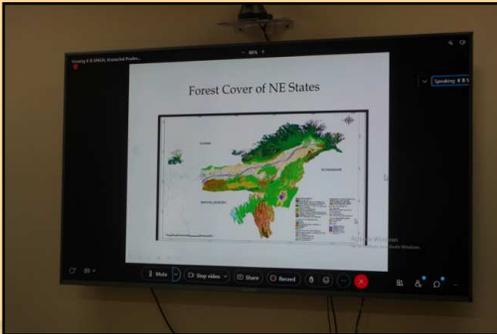
A total of 159 species of macrofungi have been enumerated from Dehing Patkai National Park (NP), representing 81 genera, 43 families, 14 orders, 5 classes and 2 phyla.





## Workshops/Seminars/Meetings/Trainings

ICFRE-RFRI, Jorhat has organized a workshop on Impact of FCA Amendments on Development of North East and Peoples' Right held on 6th October, 2023 in hybrid mode. It was inaugurated by Shri Kamakhya Prasad Tasa, Hon'ble Member of Parliament (Rajya Sabha), Assam physically. Smt. Kanchan Devi, IFS, DDG, ICFRE who joined virtually from Dehradun, addressed the inaugural session and highlighted the efforts of Government of India on forest conservation with respect to carbon neutrality etc. There were altogether four presentations during the workshop delivered by 1.Mrs. Imtienla Ao, IFS, DDG, RO Shillong, MoEFCC; 2.Shri W.I. Yatbon, IFS, DIG, RO Shillong, MoEFCC 3. Dr. Abhinandan Saikia, Assistant Professor, TISS, Guwahati 4.Shri K. B. Singh, IFS, Addl. PCCF, Department of Environment and Forest, Government of Arunachal Pradesh, Itanagar on various aspects of FCA Amendments-2023 and its impact on NE states and Peoples' Right.



ICFRE-RFRI, Jorhat, Assam organised day-long stakeholders consultation workshop on Ecotourism feasibility study in Intanki National Park (NP), Nagaland on 7th October, 2023 at Jalukie, Nagaland. A total of 42 participants representing the Forest Department, NGOs, Village Council, Academicians, etc attended the event. The workshop was organized as a part of the consultancy project entitled "Ecotourism Feasibility Study in Intanki National Park to promote tourism, livelihood improvement and biodiversity conservation" by a team of Dr. Dhrubajyoti Das, Scientist-F, Head, FECC Division and PI

Dr. Tajum Doni, Scientist-B, FECC Division.





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## Workshops/Seminars/Meetings/Trainings

ICFRE-RFRI, Jorhat conducted XXV RAG Meeting on 17th October, 2023 under the chairmanship of Dr. Nitin Kulkarni, Director in hybrid mode. Scientists and officers of the institute attended physically and other esteemed members joined virtually. Three new research projects were presented and discussed, along with discussion on ongoing projects.



ICFRE-Rain Forest Research Institute, Jorhat (Assam) organized a week-long training programme for Indian Forest Service officers on 'Bamboo Resource Development for Addressing Livelihood Concerns of communities' from 27th November to 1st December, 2023. The training was sponsored by the Ministry of Environment, Forest and Climate Change, Govt. of India. The Training was attended by 19 senior level officers from 14 different states of India. The training programme was inaugurated by Dr. G. Narahari Sastry, Director, CSIR-NEIST, Jorhat (Assam). Dr. Nitin Kulkarni, Director, ICFRE-RFRI, Jorhat welcomed all the distinguished participants and guests and briefed about purpose of training programme. He highlighted the various bamboo research and development activities conducted by ICFRE-RFRI.





## Training Programmes

ICFRE-RFRI, Jorhat organized a 5 days “Skill Development Training from 1st to 5th November, 2023 on Biofertilizer Production” for 35 B.Sc. students from Botany Department of J.B. College, Jorhat. Dr. Nitin Kulkarni, Director welcomed the students and faculty of the college and encouraged the participants to acquire various skills related to the topic. Principal of J.B. College, Dr. Utpal Jyoti Mahanta also spoke on the occasion, It was coordinated by Dr. Prosanta Hazarika, Assistant Chief Technical Officer, ICFRE-RFRI.



ICFRE-RFRI, Jorhat imparted training on “Nursery Management with special reference to Bamboo Nursery Management” at Malapindi Village, Majuli, Assam on 6th November, 2023. The training was organized by Ayang Trust, Majuli. It is a part of ongoing Tribal Development Project of the Trust funded by NABARD. Around 30 villagers participated in the programme.





## Training Programmes

ICFRE-RFRI, Jorhat organized Exposure Visit cum Training on “Bamboo and other Forest Based Livelihood Opportunities” on 20th November, 2023. Scientists and officers of this institute delivered presentation on bamboo charcoal making and bamboo preservation and other forest based livelihood options in which twelve participants from Majuli attended the programme.



ICFRE-Livelihood Extension Centre, Agartala, organized three-day Skill Development training from 14th to 16th December, 2023 on Bamboo Shoot Processing and Value Addition sponsored by NABARD, Tripura. The inaugural session was attended by Shri Diganta Kumar Das, Deputy General Manager, NABARD, Tripura; Shri Pradip Boron Roy, President of All Tripura Farmers Club; Shri Somjit Bhar, Assistant Manager, NABARD, Tripura, Shri R.K. Kalita, Scientist-F; Shri Ajoy Debbarma, Scientist-B and Shri Niren Das, ACTO. The training was imparted by Guwahati based entrepreneur, Shri Pranjal Kumar Goswami. 25 trainee participants from various districts of Tripura attended the training.





## Awareness and Demonstration Programmes

Research and development activities of ICFRE-RFRI, Jorhat, Bamboo Cultivation, Propagation, Nursery Management, Value addition & bamboo preservation techniques, Biotechnology and Tissue Culture, identification of wild edible Mushrooms, Lac Cultivation and Vermicomposting, Agar plantation etc. were demonstrated to 29 Botany (Honours) students of Srikishan Sarda College, Hailakandi on 31st October, 2023.



Dr. R.K Borah, Scientist-G of ICFRE-RFRI participated in a demonstration cum awareness programme in Kaziranga National Park (KNP) on 10th November, 2023 and imparted insightful guidance in discovering the transformative power of Xasi/Agaru, the wonder tree to boost the economy of forest fringe communities.



Dr. Rajib Kumar Borah, Scientist-G of ICFRE-RFRI, Jorhat attended a special awareness meeting held on 10th November, 2023 at Barbheta village in Bokakhat to create awareness among the people for cultivation and marketing of Sanchi trees for agar production. The meeting was organized under the initiative of Kaziranga National Park Authority and in association with ICFRE-RFRI, Jorhat. The meeting was attended by eminent environmental activist journalist Mr. Uttam Saikia and was attended by Dr. Sonali Ghosh, Director, Kaziranga National Park (KNP). In the meeting, Dr. Sonali Ghosh, Director, Kaziranga National Park (KNP) thanked the people of Barbheta for their interest in planting sanchi trees and promised to extend all kinds of cooperation in this regard. Dr. Rajib Kumar Borah, Scientist-G of ICFRE-RFRI, who was present in the meeting as a content person, gave training to the planting of sanchi trees, techniques for the cultivation of agar as well as marketing.





## Awareness and Demonstration Programmes

Indian Forest Officers trainees interacted with the authorities of Kaziranga National Park (KNP) on 28th November, 2023. Mr. Arun Vignes, IFS, DFO, Kaziranga National Park (KNP) delivered a detailed presentation on the various aspects of the Park, including flood management, anti poaching measures, eco tourism etc.



On 30th November, 2023, IFS trainees part of a week-long training programme visited world's biggest River Island, Majuli which is also the epicenter of Vaishnavite Culture. They visited one of the oldest Satras of Majuli, Auniati Satra.



Sixty-five students along with Teachers from Rajabhar High School, Jorhat visited ICFRE-RFRI, Jorhat (Assam) on 1st December, 2023. They visited the Nursery, Bambusetum, Tissue Culture lab, Bamboo Composite Centre, Bamboo Treatment Unit and Botanical Garden.





## Awareness and Demonstration Programmes

Dr. Pundarikakshudu Tetali, bamboo expert, visited bambusetum of ICFRE-RFRI on 22nd December, 2023. Dr. Satyam Bordoloi, Scientist-E, Head, Genetics and Tree Improvement Division appraised him on different bamboo related research activities conducted at ICFRE-RFRI.



Students and Teachers from Lakshmi Union High School, Jorhat (Assam) visited ICFRE-RFRI, Jorhat on 26th December, 2023. They visited the Nursery, Bambusetum, Bamboo Composite Centre etc.



Nine Post Graduate students from Indian Institute of Forest Management (IIFM), Bhopal, visited ICFRE-RFRI, Jorhat on 26th December, 2023. Mr. Rajib Kumar Kalita, Scientist-F and Head, Extension Division, ICFRE-RFRI, Jorhat delivered a presentation on research and development activities of the Institute. It was followed by visit to the field to get first-hand information on different aspects of forestry.





## Memorandum of Understandings(MoUs)

ICFRE-Livelihood Extension Centre (ICFRE-LEC), Agartala signed an MoU with General Manager, NABARD, Agartala on 13th October, 2023 to conduct skill development training on bamboo shoot processing and value addition for the people of Tripura.



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



## Great Quotes

“The environment and the economy are really both two sides of the coin. If we cannot sustain the environment, we cannot sustain ourselves”.  
-Wangari Maathai

“For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of Gold and Silver”.  
-Martin Luther



## Participation from ICFRE-RFRI in Seminars/Workshops/Meetings

Dr. Nitin Kulkarni, Director, ICFRE-Rain Forest Research Institute, Jorhat participated in National Seminar on Ethnopharmacology for Bioeconomy: NEW PARADIGM as Guest of Honour on 28th November, 2023. It was organized by CSIR-NEIST at Jorhat, Assam during 28th to 30th November, 2023.



Dr. P.S. Srikanth, Scientist-B of ICFRE-RFRI, Jorhat participated in National Seminar on Ethnopharmacology for Bioeconomy: NEW PARADIGM on 28th November, 2023. It was organized by CSIR-NEIST at Jorhat, Assam during 28th to 30th November, 2023. He also delivered an oral presentation on “Fatty Oil Composition of *Hydnocarpus kurzii* from Different Populations of Northeast India: A Preliminary Study”.

ICFRE-RFRI, Jorhat participated in Assam Divas at Tingkhong, Dibrugarh from 2nd December, 2023 to 3rd December, 2023. Shri R.K. Kalita, Scientist-F, Dr. Prasun Karmakar, Scientist-B, Shri Kumud Borah, STO and Shri Rajarishi Bhattacharyya, STO represented ICFRE-RFRI and imparted training on Forest Based Livelihood Options. Hundreds of people attended the training programme.





## Participation from ICFRE-RFRI in Seminars/Workshops/Meetings

Dr. R.K. Borah, Scientist-G and R.K. Kalita, Scientist -F of ICFRE-RFRI, Jorhat (Assam) delivered presentations on Agarwood and Bamboo, respectively, at a ICAR sponsored short course on Agro Eco Tourism for Farmers' Empowerment and Entrepreneurship Development at Extension Education Department of Assam Agricultural University, Jorhat on 11th December, 2023.



Dr. Rakesh Kr Prajapat, Ms. Tara Kumari and Ms. Rekha Mahato all Scientist-B from ICFRE-RFRI, Jorhat participated in One Week National Programme on "Managing Science & Technology Projects" from December 11th to 15th December, 2023 sponsored by Department of Science & Technology (DST), Government of India, New Delhi which was organized by Institute of Public Enterprise, Hyderabad. The 5 days programme gave insights about Project Management, Project Finance, HRM (Human Resource Management) in





## Participation from ICFRE-RFRI in Seminars/Workshops/Meetings

Dr. Prosanta Hazarika, ACTO, ICFRE-RFRI, Jorhat delivered a popular lecture on the topic 'Local Action for Biodiversity Conservation' on 14th December, 2023 at Borbheta High School, Jorhat organized by Jorhat Environment Forum, Jorhat and Eco Club, Borbheta High School, Jorhat.



Dr. R.K. Borah, Scientist-G, ICFRE-RFRI, Jorhat attended the international seminar on "Environment, culture and ethnic diversity: narratives from Himalayas and sub-Himalayan region" at University of North Bengal, Darjeeling and presented a paper titled "Empowering livelihoods: *Aquilaria malaccensis* Lamk. in North East India" on 16th December, 2023.

Dr. Dhruba Jyoti Das, Scientist-F, ICFRE-RFRI, Jorhat was invited by CMPDI, Coal India Ltd. as external judge on assessment of the problem statement entitled 'Application of Image Analytics for Tree enumeration for diversion of Forest Land (1316)' in the event under the Smart India Hackathon-2023 held from 19th to 20th December, 2023 at IES College of Technology, Bhopal. Four teams participated in the event under the problem statement no. 1316 and finally, the Team 'Terra Tech' won the title.



ICFRE-RFRI, Jorhat participated in Women's Conference organized by Assam Agricultural University, Jorhat. Theme: "Women Scientists in Plant Health Management for Sustainable Development Goals" on 22nd and 23rd December, 2023.



Dr. R.K. Borah, Scientist-G, ICFRE-RFRI, Jorhat attended the National seminar on "Role of chemistry in interdisciplinary research" organized by Kakojan college, Jorhat from 22nd December to 23rd December, 2023 and delivered an invited talk on "Biochemical profiling of agar oil from the artificially induced agarwood in *Aquilaria malaccensis* Lamk. in North East India."





## Participation from ICFRE-RFRI in Seminars/Workshops/Meetings

Dr. Nibedita Barua Dutta, Chief Technical Officer of ICFRE-RFRI, Jorhat delivered an oral presentation on the topic “A comparative study on chemical composition, antioxidant, and anti-inflammatory activities of essential oils of *Litsea cubeba* (Lour.) Pers from three states of North-east India” in National seminar “On Role of Chemistry in Interdisciplinary Research” organized by Kakojan College on 22nd and 23rd December, 2023.



Mr. Rajib Kr. Kalita, Scientist-F, ICFRE-RFRI, Jorhat delivered an interactive presentation on “Role of Bamboo for Entrepreneurship Ventures” at Assam Agricultural University, Jorhat on 22nd December, 2023 as a part of National Agricultural Higher Education Project (NAHEP) sponsored training programme where students and teachers participated.



ICFRE-RFRI, Jorhat participated in the virtual meeting on Facilitation of Quality Planting Material (QPM) of Bamboo developed by ICFRE through Public Private Partnership for mass availability on 27th December, 2023. The meeting was chaired by Mr. Prabhat Kumar, Additional Secretary, Ministry of Agriculture and Farmers Welfare, Govt. of India. On behalf of ICFRE, Dr. Ajay Thakur, Scientist-G & National Project Coordinator, AICRP ( Bamboo) presented the project proposal on aforesaid topic for funding. The ICFRE-RFRI was represented by Dr. Nitin Kulkarni, Director, Dr. Rajib Kumar Borah, Scientist-G & Group Coordinator Research and Dr. Satyam Bordoloi, Scientist-E & Head, Genetics and Tree Improvement Division.



Dr. Satyam Bordoloi, Scientist-E and Shri Debojit Neog, Technical Officer of ICFRE-RFRI, Jorhat imparted training on various aspects of bamboo cultivation as resource person sponsored by Schoolnet India Ltd. Guwahati under Oil Jeevika Scheme at Baghjan, Tinsukia (Assam) from 27th to 29th December, 2023.





## Tree Growers Mela/Kisan Mela

ICFRE-RFRI, Jorhat, Assam participated in the celebration of Assam Divas on 2nd December, 2023 at Tingkhong, Dibrugarh and showcased the research activities of the institute. Hundreds of visitors visited the exhibition stall on the first Day. Shri Rameswar Teli, Hon. Union Minister; Shri Bimal Bora and Shri Jogen Mohon, Hon. Ministers, Govt. of Assam also visited the stall. Shri R. K. Kalita, Scientist-F; Shri Bibhuti Deka, ACTO; Shri R. Bhattacharyaa, STO, and Shri K. Borah, STO attended the exhibition.



ICFRE-RFRI, Jorhat participated in the Farmer's Fair organized by Assam Agriculture University-Sugarcane, Medicinal and Aromatic Plants Research Station, Buralikson, Golaghat, Assam on 4th December, 2023. Research and Development activities of ICFRE-RFRI were showcased at the exhibition stall. Hundreds of people visited the Stall, including Shri Mrinal Saikia, Hon. Member of Legislative Assembly, Khumtai and other high-level officials of AAU, Jorhat. Shri Debojit Neog, TO and Ms. Kajal Gupta, TA explained the activities of ICFRE-RFRI in the exhibition.



ICFRE-RFRI, Jorhat participated in the Platinum Jubilee celebration of Bahona Boys' High School on 22nd December, 2023 and installed an exhibition stall to showcase research and development activities of the institute. Shri Hitendra Nath Goswami, Honorable MLA, Jorhat and Shri Rana Goswami, Ex-MLA, Jorhat along with hundreds of people visited the stall.





## Visit of Dignitaries/Guests

Dr. Ratnakar Jauhari, IFS, DDG, ICFRE, Dehradun, visited ICFRE-Livelihood Extension Centre, Agartala (ICFRE-LEC, Agartala) on 5th October, 2023 and inspected the various R & D activities. Shri Ajay Debbarma, Scientist-B and Shri Niren Das, ACTO delivered detailed presentations on various activities of the Centre.



Dr. Sanabam Sujen Singh, Extension Officer, Seismology, NEC, Shillong, visited RFRI, Jorhat on 18th October, 2023 to inspect the ongoing project on Extension of the existing tissue culture laboratory at ICFRE-RFRI, Jorhat for mass production of bamboo planting stock. Dr. Nitin Kulkarni, Director of the Institute welcomed Dr. Singh. Dr. Satyam Bordoloi, Scientist-E, Head, GTI Division delivered a presentation on the progress of the project.



ICFRE-RFRI, Jorhat had the privilege of hosting a distinguished foreign group of representatives from various Perfumery Industries of France on 30th October, 2023. The delegation, consisting of Ms. Magali Quenet, Ms. Nora Gasparini, Ms. Catherine Behar, Mr. Bostroem Jean, and Ms. Lise Brethous Parmentier, embarked on a visit to the ICFRE-RFRI to engage in insightful discussions regarding the promising future of the Agarwood-based perfumery sector. Accompanying this esteemed group were Mr. James Talukdar from Guwahati, Mr. Angshuman Gupta from Tripura, and Mr. Mriganka Bora from Golaghat, all representing Agarwood-based industries.





## Visit of Dignitaries/Guests

Shri R. Arun Kumar, IFS, Secretary, Indian Council of Forest Research and Education (ICFRE) Dehradun, visited ICFRE-Livelihood Extension Centre (ICFRE-LEC), Agartala from 25th to 26th November, 2023.



Shri R. Arun Kumar, Secretary, Indian Council of Forest Research and Education (ICFRE) Dehradun, visited ICFRE-Bamboo and Rattan Centre (ICFRE-BRC), Aizawl on 28th November, 2023.



Shri R. Arunkumar, IFS, Secretary, ICFRE, Dehradun visited ICFRE-RFRI, Jorhat and interacted with different sections of employees on 30th November, 2023. All employees along

with the Dr. Nitin Kulkarni, Director of the Institute welcomed him to the Institute. A wide range of discussions took place during the interaction.





## Visit of Dignitaries/Guests

Mr. Jigme Thynlye Namgyal, Consul General, Royal Bhutanese Consulate along with Mr. S. K. Thakuria, DFO, Golaghat and Mr. B. Borah, Agarwood Entrepreneur from Golaghat visited ICFRE-RFRI, Jorhat, Assam on 12th December, 2023. Dr. Nitin Kulkarni, Director, ICFRE-RFRI, Jorhat welcomed the Consul General along with other dignitaries, discussed and demonstrated various activities related to Agarwood in the Institute. Dr. R.K. Borah, Scientist-G delivered a presentation on different aspects and recent advances on Agarwood.



Dr. V.K. Rawat and Dr. Ranjit Daimari, Scientists of BSI, Itanagar, Arunachal Pradesh visited ICFRE-RFRI, Jorhat from 8th to 9th December, 2023 in connection with physical verification of the Botanical Garden of the institute. Shri Protul Hazarika, ACTO, ICFRE-RFRI guided them. They visited botanical garden and discussed with Dr. Nitin Kulkarni, Director, ICFRE-RFRI, Jorhat.

Dr. Dinesh Kr. Agarwal, Registrar General and Dr. Ravi Prakash, Technical Consultant (Former Registrar), Protection of Plant Varieties and Farmers' Right Authority (PPV and FRA), Ministry of Agriculture and Farmers Welfare, Govt. of India, New Delhi visited ICFRE-RFRI, Jorhat, Assam on 15th December, 2023. Dr. Satyam Bordoloi, Scientist-E and Head, Genetics and Tree Improvement Division, ICFRE-RFRI, Jorhat welcomed the Registrar General and other dignitaries.





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## Special Day Celebrations

ICFRE-RFRI, Jorhat has observed the 'Vigilance Awareness Week 2023' on the theme of "Say no to Corruption, commit to the Nation" from 30th October 2023 to 5th November, 2023. Director, ICFRE-RFRI, Jorhat administered Vigilance pledge on 30th October, 2023 to all employees. Various activities like rhyme, essay writing, elocution and quiz competitions were conducted to make the employees aware against corruption.



ICFRE-Livelihood Extension Centre (ICFRE-LEC), Agartala, Tripura observed the 'Vigilance Awareness Week 2023' from 30th October, 2023 to 5th November, 2023 with various activities and took Vigilance pledge on 30th October, 2023.



ICFRE-BRC, Aizawl, Mizoram observed the 'Vigilance Awareness Week 2023' from 30th October, 2023 to 5th November, 2023 with various activities and took Vigilance pledge on 30th October, 2023.





## Special Day Celebrations

ICFRE-RFRI, Jorhat celebrated Rashtriya Ekta Divas-2023 on 31st October, 2023. Dr. Nitin Kulkarni, Director administered Rashtriya Ekta Divas Pledge to all officers and employees. He also spoke on the occasion and paid his rich tribute to the Ironman of India, Sardar Vallabhbhai Patel. A unity run was also organized by the institute on this occasion.



ICFRE-LEC, Agartala, Tripura and ICFRE-BRC, Aizawl, Mizoram, celebrated Rashtriya Ekta Divas-2023 on 31st October, 2023 commemorating the birth anniversary of Sardar Ballabhbhai Patel.



ICFRE-RFRI, Jorhat celebrated Jan Jatiya Gaurav Divas from 15th to 26th November, 2023 commemorating the birth anniversary of legendary tribal leader and freedom fighter, Bhagwan Birsa Munda. Dr. Nitin Kulkarni, Director led Institute in offering deep respect to the great leader and offered floral tribute. ICFRE-LEC, Agartala and ICFRE-BRC, Aizawl, Mizoram also celebrated Jan Jatiya Gaurav Divas.





## Special Day Celebrations

ICFRE-RFRI, Jorhat celebrated 'Constitution Day' on 26th November, 2023 at its premises to commemorate the adoption of Indian Constitution on this day in 1949. Dr. Nitin Kulkarni, Director of the Institute started the celebration with lighting of holy lamp and offered floral tribute to Dr. B.R. Ambedkar, the architect of the Constitution of India. He spoke on the occasion and remembered the immense contributions of all the members of Drafting Committee of our Constitution. He read out the Preamble of Indian Constitution in English as well as in Hindi.



### Great Quotes

“Today Himalaya is calling you. Wake up my son, do not allow my auction. Protect me from being slaughtered.”  
-Sundarlal Bahuguna

“ Teach our children to love nature and the rest will happen on its own.”  
-Jadav Payeng



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## Cultural Extravaganza

The Cultural Extravaganza organized by ICFRE-RFRI, Jorhat on 29th December, 2023 highlighting the culture of Northeast India as part of the training programme for Indian Forest Service Officers was a resounding success. Through a vibrant display of traditional arts, music, culinary delights, and interactive experiences, the event achieved its goal of promoting cultural exchange and fostering a greater understanding of the rich tapestry that makes up the northeastern states. Bamboo made musical instruments made pivotal role in the cultural programme.





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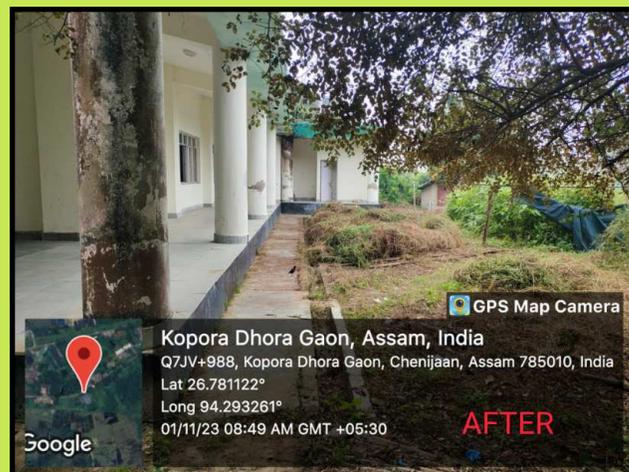
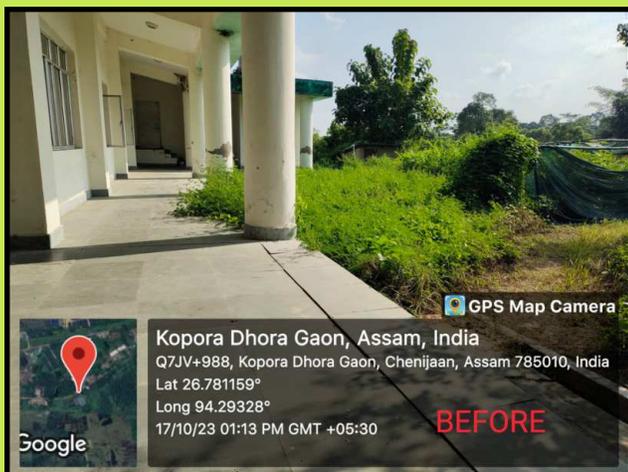
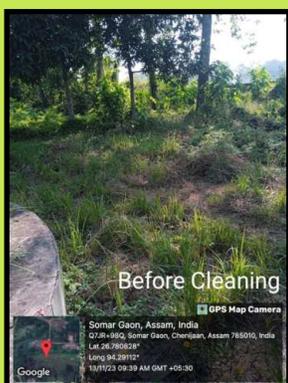
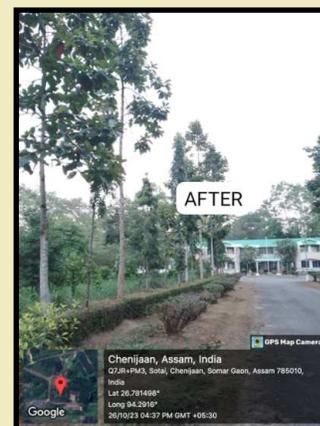


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## Swachhhta Campaign 3.0 under Mission Life

ICFRE-RFRI, Jorhat and its centres ICFRE-BRC, Aizawl and ICFRE-LEC, Agartala carried out cleanliness drives in the campus throughout the period under Swachhhta campaign 3.0 under mission life.





## Recent Publications

Hazarika, P., Kumar, A and Das, D.J.(2023). Evaluating pre-sowing seed treatment on the germination of important forest fruit plant species, *Crop Res.*58 (5 & 6): 251-259. DOI: [10.31830/2454-1761.2023.CR-901](https://doi.org/10.31830/2454-1761.2023.CR-901)



Bhuyan, M., Sharma, S., Dutta, N.B., and Baishya, G. (2023). tert-Butylhydroperoxide mediated radical cyanoalkylation/cyanoalkenylation of 2-anilino-1,4-naphthoquinones with vinylarenes/arylalkynes and azobis (alkylcarbonitrile) s. *Org. Biomol. Chem.*, 21, 9255-9269. [IF 3.89 (Thompson Reuters)].



Shera, P.S., Sharma, S., Karmakar, P. and Singh, S. (2023). Encyrtid Parasitoids. In: *Parasitoids in Pest Management* (Omkar, ed.), Vol.1, CRC Press, Taylor and Francis Group, United States.

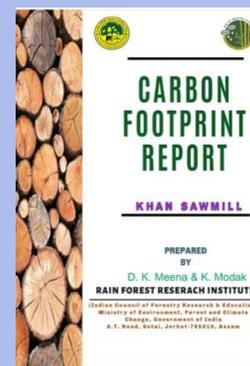


Gogoi, Girish & Rajesh, K. (2023). A new distribution record of the macrofungus *Galiella rufa* from Assam. *Funguy# 5*, In: *Zoo's Print* 38 (10): 27.



### ICFRE-RFRI Report

Carbon Footprint Report of Khan Sawmill published by ICFRE-RFRI under the consultancy project. The aim of the report was to fulfill the requirement of DPR preparation for the renewal of license of sawmill as per the Assam Wood Based industries (Promotion and Development) Rules, 2022.







## ICFRE-RFRI IN NEWS

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### অসম আদিত

#### জৈৰ সাৰ উৎপাদনৰ প্ৰশিক্ষণ

জৈৰ সাৰ উৎপাদনৰ প্ৰশিক্ষণ  
প্ৰতিবেদক, লাহৌগড়, ৬ নবেম্বৰ

জৈৰ সাৰ উৎপাদনৰ প্ৰশিক্ষণ  
প্ৰতিবেদক, লাহৌগড়, ৬ নবেম্বৰ

জৈৰ সাৰ উৎপাদনৰ প্ৰশিক্ষণ  
প্ৰতিবেদক, লাহৌগড়, ৬ নবেম্বৰ

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### দৈনিক জনমভূমি

#### জৈৰ সাৰ উৎপাদনৰ কৌশল প্ৰশিক্ষণৰ সামৰণি

জৈৰ সাৰ উৎপাদনৰ কৌশল প্ৰশিক্ষণৰ সামৰণি  
জৈৰ সাৰ উৎপাদনৰ কৌশল প্ৰশিক্ষণৰ সামৰণি

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### Eastern Chronicle

#### ICFRE-RFRI, Jorhat conducts Skill Development Training on Biofertilizer

ICFRE-RFRI, Jorhat conducts Skill Development Training on Biofertilizer  
ICFRE-RFRI, Jorhat conducts Skill Development Training on Biofertilizer

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### নিয়মীয়া বাৰ্তা

#### বিশ্ব অৰ্থনীতিত বিপ্লৱ আনিব অসমৰ বাঁহে

বিশ্ব অৰ্থনীতিত বিপ্লৱ আনিব অসমৰ বাঁহে  
বিশ্ব অৰ্থনীতিত বিপ্লৱ আনিব অসমৰ বাঁহে

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### দৈনিক জনমভূমি

#### বৰা অৰণ্য গৱেষণা প্ৰতিষ্ঠান আৰু উজ্জ্বি বিজ্ঞান বিভাগ, শিৱসাগৰ ছোৱালী কলেজৰ মাজত বুজাবুজিৰ চুক্তি স্বাক্ষৰ

বৰা অৰণ্য গৱেষণা প্ৰতিষ্ঠান আৰু উজ্জ্বি বিজ্ঞান বিভাগ, শিৱসাগৰ ছোৱালী কলেজৰ মাজত বুজাবুজিৰ চুক্তি স্বাক্ষৰ  
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## Human Resource News

### A. Appointments

Sl No	Name of Officers/Staff	Post	Date
1.	Miss Mitali Mehta	Scientist-B in ICFRE-RFRI	10/10/2023
2.	Shri Amitav Roy	Scientist-B in ICFRE-RFRI	11/10/2023
3.	Shri Anshuman Patel	Scientist-B in ICFRE-RFRI	11/10/2023
4.	Mr. Kambam Boxen Meetei	TA in ICFRE-RFRI	11/12/2023
5.	Miss Chandramika Bora	MTS in ICFRE-RFRI	12/12/2023
6.	Md. Mahmudul Hassan Middy	TA in ICFRE-RFRI	15/12/2023
7.	Miss Muna Tamang	Scientist-B in ICFRE-RFRI	26/12/2023

### B. Superannuation

Sl. No.	Name of Officers/Staff	Post	Date
1.	Shri Hari Ram Borah	Chief Technical Officer in ICFRE-RFRI	31/12/2023



## ICFRE-RFRI FREE PUBLICATIONS

Sl. No.	Title	Author	Pub Y
1.	Bamboo Kissan Nursery (Assamese), 2002	Pattanaik, S. & Borah, R.K.	2002
2.	Bamboo Kisaan Nursery (English), 2002	Pattanaik, S. & Borah, R.K.	2002
3.	Bamboo Kisaan Nursery (Bengali), 2002	Pattanaik, S. & Borah, R.K.	2002
4.	Bahor Angaj Bistaran (Posters in Assamese)	Pattanaik, S. & Borah, R.K.	2002
5.	Rattans for prosperity (Eng) Publication No.16	Bhuyan, T.C. & others	2003
6.	Samridhir babe bet (Assamese) RFRI/BR-17	Bhuyan, T.C. & others	2003
7.	User manual: Jagriti	Gurung, D & Kalita, R.K.	Nil
8.	Bamboo in NE India : a management guide (Training manual) English , ICFRE/RFRI/TM-2	Senthilkumar, N. & others	2007
9.	Bamboo in NE India : a management guide (Training manual) Assamese, ICFRE/RFRI/TM-2	Bhuyan, T.C. & others	2007
10.	Tita Sopa (Michelia champaka Linn.), RFRI/VVK/Br-03	Hazarika, P. & Pandey, B.K.	2008
11.	Meen Palon Sohayika : A manual for small scale fish farming , (ICFRE/RFRI/TM- 3) Assamese	Baruah, Uttam Kumar and Borah, Bibha	2008
12.	Bamboo in NE India : A management guide Vol.II ( Training manual ) English , ICFRE/RFRI/TM-2	Borah, R.K. & others	2009
13.	Bamboo in NE India : A management guide Vol.II ( Training manual ) Assamese, ICFRE/RFRI/TM-2	Borah, R.K. & others	2009
14.	Vermicompost: Production technology and its role in increasing soil productivity, RFRI/BR-18	Gogoi, S. & others	2009
15.	Self employment through Scientific Patchouli cultivation, (Ass.) RFRI/BR-19	Gogoi, B. & Borah, R.K.	2009
16.	Compost-Methods of preparation and its importance (Ass.) RFRI/BR-20	Gogoi, S. & others	2009
17.	Bamboo Nursery by scientific method: A way of self employment (Ass.), RFRI/BR-21	Gogoi, B. & Borah, R.K.	2009
18.	Bamboo preservation techniques (Ass.) RFRI/BR-22	Sharma, G & others	2009
19.	The bamboo flowers-its problems and remedies (Ass.) RFRI/BR-23	Borah, E.D. & Borah, R.K.	2009
20.	Hollong Nursery: Techniques & Practices, RFRI/BR-24	Pattanaik, S. & Borah, R.K.	2009
21.	Hollong gosor pulibari prostutkaranar kaushal aru anushilan (Ass.) RFRI/BR-24	Pattanaik, S. & Borah, R.K.	2009
22.	Rattan (Bet): Abish aruhi udbhid. RFRI/BR-25	Bhuvan, T.C. & others	2009
23.	Bamboo Nursery: Techniques & Practices, RFRI/BR-26	Pattanaik, S. & Borah, R.K.	2009
24.	Bahar pulibari prostutkaranar kaushal aru anushilan (Ass.), RFRI/BR-26	Pattanaik, S. & Borah, R.K.	2009
25.	Mangium (Ass.), RFRI/BR-27	Borah, R.K. Ed.	2009
26.	Acacia mangium: A prospect tree species for Northeast India, RFRI/BR-27	Tara Chand & Borah, R.K. Ed.	2009
27.	Agar tree: The source of liquid gold, RFRI-BR-28	Borah, R.K. Ed.	2009
28.	Tita Sopa (Ass.), RFRI/BR-29	Borah, R.K. Ed.	2009
29.	Tita Sopa (Eng.), RFRI/BR-29	Borah, R.K. Ed.	2009
30.	Lajuki Ban (Mimosa diplotricha), RFRI/BR-30 (in Ass.)	Borah, R.K. Ed.	2009
31.	Mimosa, the alien invasive species, RFRI/BR-30	Borah, R.K. Ed.	2009



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## ICFRE-RFRI FREE PUBLICATIONS

Sl. No.	Title	Author	Pub Y
32.	Sarpagandha (Ass.), RFRI/BR-31	Borah, R.K.	2009
33.	Gamari - The white teak, RFRI/BR-32	Borah, R.K. & Gogoi, B	2009
34.	Gamari (Ass.), RFRI/BR-32	Bora, R.K. & Gogoi, B	2009
35.	Schima wallichii (DC.) Korth, Project No. RFRI-12/2008-09/SFM	Parkash, Vipin.	2009
36.	Trichoderma mass production for field application, Project No.: RFRI-42/2008-09/SFM Leaflet No.1	Parkash, Vipin.	2009
37.	Abroma augusta L. (Gorokhia koro), Project No.: RFRI-42/2010-11/SFM Leaflet No.II	Parkash, Vipin.	2010
38.	RFRI Brochures	RFRI	Nil
39.	Orchids exploration and conservation, RFRI/BR-29	Singh, A.P. & Borah, R.K.	2011
40.	Gmelina arborea defoliator (Craspedonta leayana) and its management	Raja Rishi & others	2016
41.	Aquilaria defoliator (Heortia vitessoides) and its Management	Raja Rishi & others	2016
42.	Recent Advances in Bamboo Research and Development in India	Vipin Parkash & Others	2017
43.	Betula alnoides (Himalayan Birch), - Volume Biomass and Carbon Tables for Meghalaya (Report No.2)	Giri, K. & others	2018
44.	Mortality of Tree bean (parkia timoriana) in North-East India (Report No.3)	Borah, R.K. ; Sharmah, Hansraj; Sultana, M.; Borah, Jimi & Buragohain, P.	2018
45.	Duabanga grandiflora - Volume, Biomass and Carbon Tables for Meghalaya (Report No.4)	Giri, K. & others	2018
46.	Magnolia champaca (Champak) - Volume, Biomass and Carbon Tables for Meghalaya (Report No.5)	Giri, K. & others	2018
47.	Toona ciliata (Toon Tree) - Volume, Biomass and Carbon Tables of Meghalaya (Report No.6)	Giri, K. & others	2018
48.	Forest Soils of Nagaland (Report No.7)	Mishra, G.; Giri, K.; & Das, P.K.	2019
49.	Agarwood induction technology (Report No.8)	Borah, R.K. & others	2019
50.	Plant Growth Promoting Rhizobacteria (PGPR) in Jhum fields for productivity enhancement (Report No.9)	Giri, K. & others	2019
51.	Garcinias of Upper Brahmaputra Valley (Report No.10)	Dutta, D. & Hazarika, P.	2019
52.	Mikania micrantha : A growing threat to tropical forest ecosystems-a case study from forest of upper Assam (RFRI Report-11)	Baruah, Kuntala No. & Das, D.J.	2020
53.	Broom grass: Thysanolaena latifolia (Roxb. Ex Hornem) Honda	Borah, G.; Handique, C.; Hazarika, P.	Nil
54.	Schumannianthus dichotomus (Roxb.) Gagnep. (Pati - doi or Shital Pati)	Borah, G.; Handique, C.; Hazarika, P.	Nil
55.	Phrynium capitatum Wild. (Koupat)	Borah, G.; Handique, C.; Hazarika, P.	Nil
56.	Livistona jenkinsiana Griff. (Tokow)	Borah, G.; Handique, C.; Hazarika, P.	Nil
57.	Local and Regional Volume Tables for Aquilaria malaccensis Lam. In North East India, (RFRI Report-14)	Giri, Krishna & others	2021
58.	Seed Ball Technology (Report No.15)	Hazarika, P. & Others	2021
59.	Pinus kesiya Royle ex Gordon (Khasi pine) Volume, Biomass and Carbon Tables for Manipur (Report No.16)	Giri, K. & Others	2021
60.	Arunachal Pradesh Forestry: Glimpses from the Past (Book)	Jayaraj, R.S.C. & Handique, C.	2021
61.	Quercus serrata (Roxb.) Volume, Biomass and Carbon Tables for Manipur (RFRI Report No.17)	Giri, K.; Chandra, G.; Kardong, P.; Jayaraj, R.S.C. and Chanu, E.N.	2022
62.	Package of Practices for Restoration of Coal mined Land (RFRI Report-18)	Hazarika, Prosanta & others	2022
63.	Forty Six Years of Research in RFRI (Abstract of Publications: 1976 to 2021)	Jayaraj, R.S.C. & others	2022
64.	Drivers of Deforestation in Meghalaya	Jayaraj, Rsc & others	2022



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## ICFRE-RFRI PRICED PUBLICATIONS

Sl.	TITLE	AUTHORS	Year of Publication	Price(Rs.)
1.	Technical Bulletin on Applied Forestry Research for Field Foresters	IRMDFR	1998	75
2.	Dipterocarpus retusus Syn. D. macrocarpus Hollong - Past , Present and Future	Rawat, Vijay.	1998	75
3.	Recent methodologies on forest ecological research (May-12-20, 1998) Orientation Course	IRMDFR	1998	500
4.	Northeast regional Forestry Research Plan	IRMDFR	2000	500
5.	Workshop on application of Improved Technology for afforestation in NE India	Goala, B. ;Prasad, K.G. Ed.	2001	150
6.	Integrated Approach to Shifting Cultivation - case studies	Prasad, K.G. Ed.	2001	500
7.	IRMDFR - A perspective	IRMDFR	2001	250
8.	Gmelina arborea- A Technology Mission	Kumar, Ashok.; Singh, A.N.; Kalita, R.K. & Prasad, K.G.	2002	150
9.	Proceedings of expert consultation on strategies for sustainable utilization of bamboo resources subsequent to gragarious flowering in the NE	Pattanaik, S. & others Eds.	2002	250
10.	Hand book of propagation cultivation & management of bamboo	Pandey, B.K. & others	2008	250
11.	Hand book on pest problems of important bamboo species of Assam and their management	Raja Rishi, R. & others	2014	90
12.	Mushrooms of Nagaland	Kumar, Rajesh; Bisht, N.S.; Pandey, S. and Tapwal, A.	2015	500
13.	Butterfly atlas of Arunachal Pradesh, India	Singh, A.P. and Das, D.J.	2016	2000
14.	Mushrooms of Meghalaya	Kumar, Rajesh; Bisht, N.S.; and Jayaraj, R.S.C.	2020	200
15.	Floristic Diversity of North-East India	Naithani, H.B.	2020	300
16.	Mushrooms of Mizoram	Kumar, Rajesh, Jayaraj, R.S.C.	2021	700
17.	Aqularia malaccensis: An annotated bibliography	Jayaraj, R.S.C.; Bhamra, G.K.; Ahmed, Shagufta and Borah, Pallabi	2022	450
18.	Orchids of North Eastern Coal Fields	Barua, K.N.	2022	800
19.	Forest Seed Identification- a Pictorial guide for Northeast India	Singh, M.K. & others	2022	330
20.	Lab manual for seed biochemistry	Sharma, V.& Singh, M.K.	2022	300
21.	Tree blossoms of North East India	Singh, M.K.and Bhuyan, T.	2022	2400
22.	Monograph onParkia timoriana	Singh, Manish K.	2022	860



# ICFRE-RFRI NEWSLETTER



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## Seedlings/Vegetative propagules, various products and harvested items of ICFRE-RFRI

### A. The rate of bamboo seedlings/vegetative propagules (macro and micro propagated) and other plant species

Sl No.	Special Category	Rates per plant/rhizome(in Rs.)
1.	Bamboo seedlings( other than ornamental bamboos)	15
2.	Bamboo vegetative propagules ( macro/micro propagated) (other than ornamental bamboos)	30
3.	Bamboo rhizome	350
<b>Ornamental bamboos</b>		
4.	<i>Bambusa vulgaris var. striata</i>	100
5.	<i>Bambusa wamin</i>	100
6.	<i>Bambusa multiplex</i>	100
7.	<i>Melocalamus compactiflorus</i>	100
8.	<i>Pseudosasa japonica</i>	100
9.	<i>Sasa fortunei</i>	100
10.	Seedling of all plant species	15

### B. The rate of various products made as a part of the ongoing projects

Sl. No.	Name of the product	Rates per kg (in Rs.)
1.	Vermicompost	10
2.	Mushroom spawn	120
3.	Edible mushroom	120
4.	Bamboo Charcoal	20
5.	Bamboo Charcoal briquettes	45
6.	Biochar	40



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**Seedlings/Vegetative propagules, various products and harvested items of ICFRE-RFRI available for sale**

**C. The rate of matured bamboos of different species of RFRI Bambusetum /RFRI campus are fixed as follows:**

Sl.No	Name of the Species	Rates per bamboo ( in Rs.) (including cutting charge)
1.	<i>Bambusa balcooa</i> ( Bhaluka)	15
2.	<i>Bambusa tulda</i> (Jati)	80
3.	<i>Melocanna baccifera</i> (Muli)	350
4.	Other species	70

**D. The rate of dead and dying bamboos and other trees/tree branches as fire wood are fixed as follows:**

Sl. No.	Name of the species	Rates per cubic meter (in Rs.)
1.	Timber(Fire wood)	100
2.	Bamboos ( Fire wood)	50

**E. List of Nursery stocks available at ICFRE-RFRI**

Sl.No.	Specifications (Rates @ Rs 15/ per seedling)
1.	<i>Altingia excelsa</i> (Jutuli)
2.	<i>Adenanthera pavonina</i> (Red- chandan)
3.	<i>Neolamarckia cadamba</i> (Kadamb)
4.	<i>Aphanamixis polystachya</i> (Banderdima)
5.	<i>Aquilaria malaccensis</i> (Agar)
6.	<i>Baccaurea ramiflora</i> (Leteku)
7.	<i>Chukrasia tabularis</i> (Bogi-poma)
8.	<i>Dipterocarpus retusus</i> (Hoolong)
9.	<i>Duabanga gradiflora</i> (Khohan)
10.	<i>Elaeocarpus sphaericus</i> ( Rudraksh)
11.	<i>Gmelina arborea</i> ( Gamhar)
12.	<i>Grevelia robusta</i> (Silver cania)
13.	<i>Kayea assamica</i> (Sia-nahor)
14.	<i>Magnolia champaca</i> (Tita sopa)
15.	<i>Mimosops elengi</i> ( Bokul)
16.	<i>Shorea robusta</i> (Sal)
17.	<i>Syzygium cumini</i> (Kala-jamun)
18.	<i>Syzygium jambos</i> (Bogi-jamun)
19.	<i>Terminalia myriocarpa</i> (Shlakh)
20.	<i>Terminalia bellerica</i> (Bhomura)
21.	<i>Terminalia chebula</i> (Hilikha)
22.	<i>Ziziphus mauritiana</i> (Bogori)



## *Infrastructure and Facilities Available at ICFRE-RFRI*

### ICFRE -RFRI BOTANICAL GARDEN

ICFRE- Botanical Garden expanded with an area of 3.9 hectare exhibit a wide variety of rare plants consisting of 151 Tree species, 110 orchids, 35 species of Climbers and shrub species, 56 species of medicinal and aromatic plants, 6 species of Gymnosperm 20 species of edible fruits, 15 species Pteridophyte and some Herbaceous species. The Botanical Garden also poses a Orchidarium and a Medicinal & Aromatic Plants Garden.





## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Insectarium

The Insectarium of ICFRE-RFRI (reference collection of North East India) was inaugurated on 5th June, 2022 on the eve of World Environment Day. It was inaugurated by Dr. Atanu Kumar Dutta, Principal, Jorhat Institute of Science and Technology in the presence of Dr. R.S.C. Jayaraj, former Director, ICFRE-RFRI. The ICFRE-RFRI Insectarium has a collection of 2250 no. of insect specimens belonging to 450 species arranged order-wise in four cabinets and family-wise inside the cabinets. The facility has a collection of Moths, Butterflies, Beetles, and Orthopteran specimens related to forestry since the year 1978 from various parts of North East India. The Entomology wing under the Forest Protection Division collects the encountered insects and is responsible for the preservation of the insect specimens in the insectarium.



INSECT DIVERSITY OF NORTH-EAST INDIA			
Order	Number of species	Number of specimens	Number of families
<b>MOTHS</b>			
Gelechiidae	100	100	100
Plutellidae	100	100	100
Pyralidae	100	100	100
Gravimidae	100	100	100
Geometridae	100	100	100
Prodoxidae	100	100	100
Choreutidae	100	100	100
Limacodidae	100	100	100
Microlepidoptera	100	100	100
<b>BUTTERFLIES</b>			
Nymphalidae	100	100	100
Pieridae	100	100	100
Lycaenidae	100	100	100
Riodinidae	100	100	100
Graphidae	100	100	100
Chrysothrixidae	100	100	100
Lycaenidae	100	100	100
<b>BEETLES</b>			
Curculionidae	100	100	100
Chrysomelidae	100	100	100
Carabidae	100	100	100
Staphylinidae	100	100	100
Chrysomelidae	100	100	100
Curculionidae	100	100	100
<b>ORTHOPTERA</b>			
Orthoptera	100	100	100



### Gustav Mann Herbarium

Gustav Mann Herbarium ICFRE-RFRI is named after the German Botanist Gustav Mann who served as Conservator of Forest in Assam from the year 1870 to 1885 and first started the systematic collection of plants in those years. His collection of plants formed the nucleus of 'Assam Forest Herbarium' housed in Shillong. Presently, Gustav Mann Herbarium ICFRE-RFRI houses more than 6000 herbarium sheets covering collection of Pteridophyte, Gymnosperm and Angiosperms arranged according to Baentham and Hooker's system of Nomenclature.





## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Tissue Culture Lab

for pursuing research works on biotechnological aspects of plants and their products for productivity enhancement and conservation.



### ICFRE-RFRI Seed Technology & Soil Microbiology Labs





## *Infrastructure and Facilities Available at ICFRE-RFRI*

### ICFRE-RFRI Geo-Informatics Lab

ICFRE-RFRI has a well equipped GIS laboratory for creation, management, updating and sharing of GIS databases regarding ecology and biodiversity of the North Eastern region.



### ICFRE-RFRI Plant Pathology, Mycology & Entomology Labs

ICFRE-RFRI has Plant Pathology, Mycology and Entomology Labs which are well equipped with all facilities to conduct various research activities to evolve eco-friendly management strategies for the management of insect pests, diseases and weeds.



### ICFRE-RFRI Biochemistry Lab

The Biochemistry Lab of ICFRE-RFRI has facilities for pursuing research work on biochemistry of plants for value addition and biochemistry bioprospecting





## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Soil Lab

ICFRE-RFRI has got an well established state of the art Soil laboratory. Various soil analysis including soil, texture, pH, Electrical conductivity, Nitrogen, Phosphorus, Potassium, Organic carbon, Total carbon, Micronutrients etc is done by experienced technical personnel.



Atomic Absorption Spectrometer(AAS)



Element Analyzer(EA)



Nitrogen Analyzer



Hot Air Oven



Flame Photometer



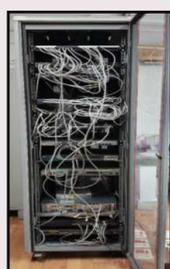
Water Distillation Unit



Hot Water Bath

### ICFRE-RFRI IT CELL FACILITIES

The institute's IT infrastructure is a large setup, serving over 100 end users. It features an OFC based network ensuring round-the-clock internet connectivity. Additionally, the setup includes a well-equipped Computer Lab, two big halls with uninterrupted Video Conferencing (VC) facilities, a strong power backup system, 150-port EPABX system, Bio-Metric Attendance System, CCTV Camera Surveillance System and various other allied IT facilities.



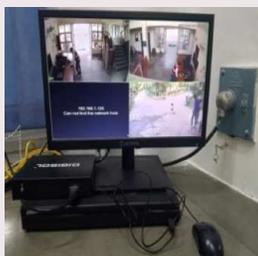
Network Switches



Information Technology cell



VC Arrangement



CCTV



EPABX System

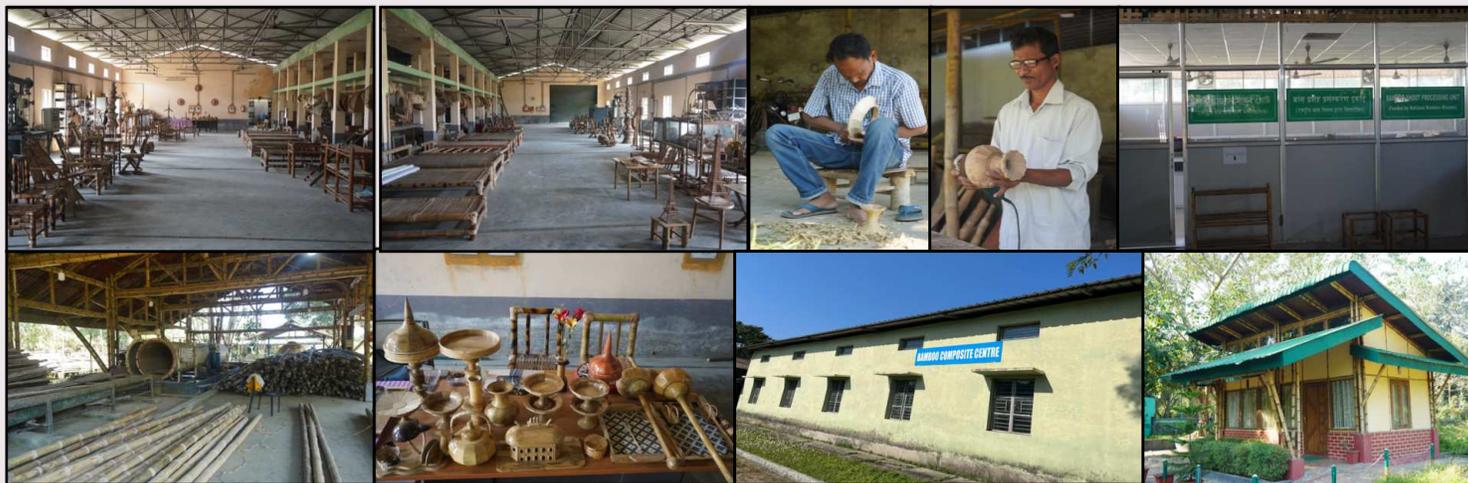


Online Power Backup System

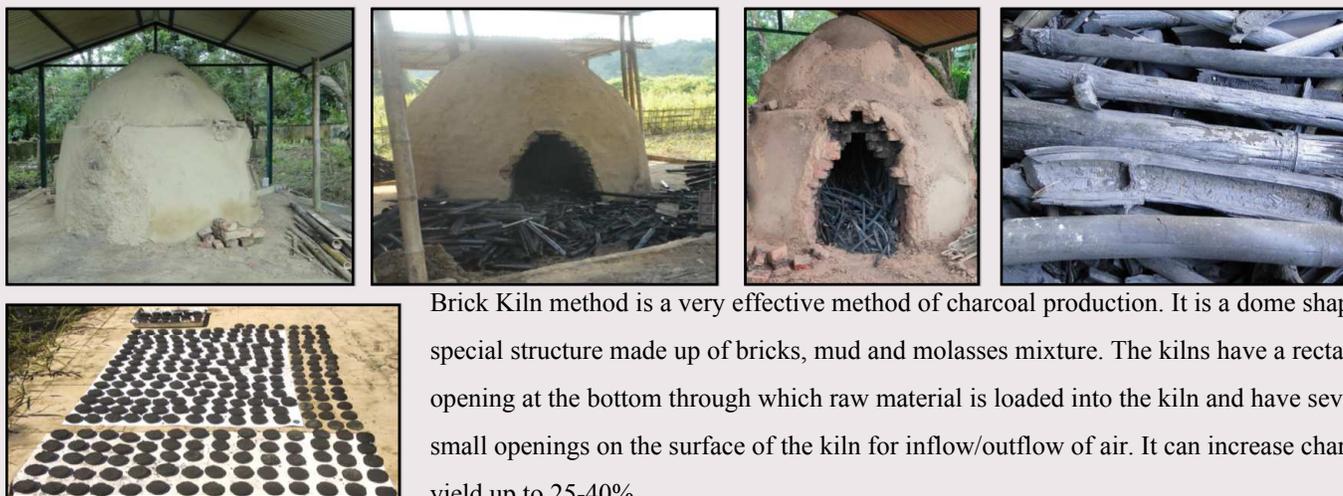


## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Bamboo Workshop



### ICFRE-RFRI Bamboo Charcoal Production Unit



Brick Kiln method is a very effective method of charcoal production. It is a dome shape special structure made up of bricks, mud and molasses mixture. The kilns have a rectangular opening at the bottom through which raw material is loaded into the kiln and have several small openings on the surface of the kiln for inflow/outflow of air. It can increase charcoal yield up to 25-40% .

### ICFRE-RFRI Van Vigyan Kendras (VVKs)

Six Van Vigyan Kendras (VVKs) are in operation in six North Eastern States, as given below.

Sl No	State	Location of VVKs
1	Assam	Assam Forest School, Guwahati
2	Arunachal Pradesh	SFRI, Itanagar
3	Nagaland	SEFTI, Dimapur
4	Mizoram	Forest Training School, Aizawl
5	Tripura	FRC-LE, Hatipara, Agartala
6	Manipur	SFTI, Mantri Pukhuri, Imphal



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## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Bambusetum & Bamboo Germ Plasm bank

ICFRE-RFRI Bambusetum has 50 species and the germplasm bank contains more than 200 selected genotypes of commercially important bamboo species



### ICFRE-RFRI Bamboo Nurseries





## Infrastructure and Facilities Available at ICFRE-RFRI

### ICFRE-RFRI Vermicompost Unit



### ICFRE-RFRI AUDITORIUM



### ICFRE-RFRI SCIENTISTS' HOSTEL



### ICFRE-RFRI LIBRARY



ICFRE-RFRI library is a leading organizational setup in the whole North East India having collection of forestry related literature. The collection mainly deals with the broad spectrum of forestry; and its allied fields such as – Conservation of Flora and Fauna, Environment, Climate, Natural resource management, Biology, Chemistry, Forest protection, Silviculture, Forest soils, Biotechnology, Ecology, Agro-forestry, Biodiversity, Bamboo & Rattans, GIS & Remote Sensing, literature related to North East India.

Following is a quick view of the resources available in ICFRE-RFRI Library

Sl. No.	Resources	Total Stock	Remarks
1	Books	7666	include books, journals, annual reports, proceedings, Theses, donated books, etc.
2	Non Book materials	1555	incudes pamphlets, brochures, bulletins, booklets etc.
3	Journals, magazines, newsletters subscribed during (2022-2023)	16	Indian
4	Total Loose Journals	2650	Indian
5	Bound Vols. of Journals, Newsletters and Bulletins	2412	Comprising titles of Indian & Foreign Journals, Newsletters and Bulletins
6	Maps	44	
7	CD-ROM/Floppy/Video Cassettes	514	Includes documentary, software, databases etc.





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