

## From the Director's Desk

### GREETING FROM TFRI FAMILY,



I take pride in sharing the fourth issue (July – August, 2022) of TFRI Newsletter, showcases, significant research activities, events organized, participated and publications made during the period.

I hope this newsletter will be helpful for researchers, different stakeholders, and policy makers concerned with forestry research.




**Dr. G. Rajeshwar Rao, ARS**  
Director, TFRI Jabalpur

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## Major Events

Tropical Forest Research Institute conducted plantation drive to mark the event of Van Mahotsav On 15<sup>th</sup> July 2022.

During the event, tree species including Moringa, Beal, Mango, Jamun, Mousari etc. having high nutraceutical value were planted under the initiative to celebrate Azadi Ka Amrit Mahotsav in TFRI, Jabalpur.

Dr G Rajeshwar Rao, ARS, Director of the institute emphasized on use of bio-degradable bags for plantation activity.



## Celebration of Independence Day-2022 at TFRI, Jabalpur

India's 76<sup>th</sup> independence day was celebrated at TFRI Jabalpur and centre at FRC-SD, Chhindwara. On this occasion, Mrs. Neelu Singh, Group Co-ordinator Research, TFRI hoisted the National Flag. Extending wishes, she explained about tri colours of the Flag. She encouraged everyone to serve nation by saving our environment by planting more trees. Awards were distributed to the winners of the various competitions organised under Azadi ka amrit mahotsav.



## “Tree Outside Forests in India” funded by USAID-ICRAF

TFRI has actively participated in brainstorming session, jointly organized by TOFI consortium partners, NCCF and CIFOR-ICRAF on "Accreditation of Nurseries and Certification of Quality Planting Material", held on 29<sup>th</sup> August, 2022 through virtual mode. Dr. Nanita Berry, Scientist – F moderated the session on “Opening House Discussion comments and feedback from all participants (Key stakeholders and Consortium Partners)” as Chairperson. More than 70 people from across the country took part in this event.



**Consortium partners of TOFI during meeting**

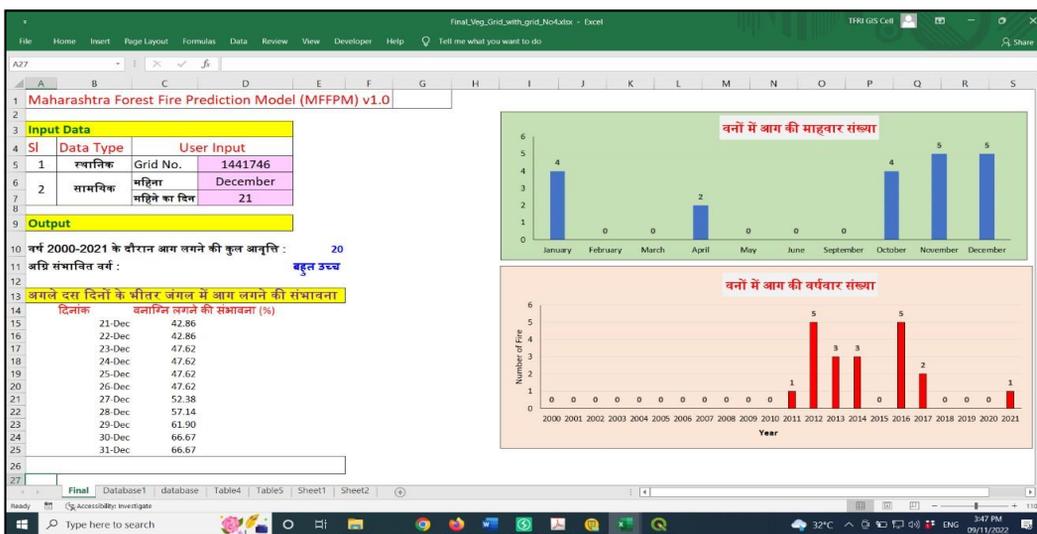
## Registration / Filing of Patents

Tropical Forest Research Institute filed two patents -

1. Indian Patent Application no. 202221045676 dated 10.08.2022 in the name of Indian Council of Forestry Research & Education - Tropical Forest Research Institute, relating to **A FUNNEL BASED TRAP FOR TRAPPING LONGHORN BEETLES** – Inventor: **Dr. Nitin Kulkarni**
2. Indian Patent Application no. 202221045727 of 10.08.2022 in the name of Indian Council of Forestry Research & Education -Tropical Forest Research Institute, relating to **A BOX BASED TRAP FOR TRAPPING LONGHORN BEETLES** - Inventor: **Dr. Nitin Kulkarni**

## Developing a probability-based forest fire predictions model for Maharashtra

A Microsoft Excel-based tool with an intuitive graphical user interface (GUI) has been developed to visualize the monthly and yearly distribution of forest fires, the total number of forest fires over the past 21 years, and the pixel-wise probability for the next 10 days using historical MODIS fire occurrence data. Using the day of the month, month, and location as inputs, the probability of a MODIS pixel experiencing a fire will be calculated. The forest front staff, who are in dire need of the hours, will be able to better plan their combat strategy.



View of GUI, Maharashtra Forest Fire Prediction Model (MFFPM) v1.0

Shri. Dheeraj Gupta, Scientist D

## Third Party Environmental Auditing of different Coal Mines in India

To maintain the ecology and environmental health of coal mining area, Indian Council of Forestry Research and Education (ICFRE) has been awarded projects from multiple coal mining companies to undertake **Third-party auditing** of their respective coal mines spread across the country. As a member of the ICFRE team of experts, the conditions laid down in the Environmental Clearances (EC) approval for mitigation of environmental pollution were reviewed, the compliance with the project approval conditions and other warranted approvals of the mine were assessed, the existing levels of air, water and noise pollution with respect to the laid down standards were reviewed through on site inspection, and recommendations which were necessary for implementation of measures as stipulated in the EC so as to improve environmental performance of the mine were provided and individual Environmental Audit Report pertaining to the domain of air quality monitoring, noise quality monitoring and water quality (surface water, ground water, sewage water and effluents) monitoring were prepared and submitted to ICFRE for 5 different mines vis-à-vis Dipka Open Cast Project Mines (OCP), South Eastern Coalfields Limited, Chhattisgarh, Sharda Highwall Mines and Dhanpuri OCP mines of South Eastern Coalfields Limited (SECL), Madhya Pradesh, and Manuguru OCP and Padmavathi Khani Underground Mines of Singareni Collieries Company Limited (SCCL), Telangana.



Discussions and deliberations with Mining Officials of Manuguru OCP, Telangana



On-site field inspection of Sharda Highwall Mines, SECL Madhya Pradesh



On site water quality assessment (pH) of treated sewage water at Padmavathikhani Underground Mines, SCCL Telangana



Inspection of Dust suppression measures undertaken at the source end (underground) of Padmavathi khani UG Mines, SCCL Telangana

## Nature-Based Solutions to deal with challenges of Desertification and Drought

Conducted an awareness programme for farmers of Chambal region to create awareness in opting Nature-Based Solutions to deal with challenges of Desertification and Drought. The need for carrying out reforestation and afforestation programmes, in and around Chambal ravines, to reduce land degradation was emphasized.

Farmers from three villages ie. Nayapura Useth, Bheelpur, Esah Haveli of Morena District actively interacted and volunteered for live-fencing tree plantation in their farm bunds. Tropical Forest Research Institute conducted this awareness programme under AICRP-24 on Combating Desertification and as part of Azadi Ka Amrit Mahotsav celebrations.



Shri. M. Rajkumar, Scientist D and Shri. Raghavendra Singh, TO

## Germination behavior of seeds of *Haldina cordifolia* (Haldu)

*Haldina cordifolia* is a deciduous tree that can grow well over 20 metres height. It is an Ayurvedic medicinal plant, used for the treatment of skin diseases, wounds, vomiting, intestinal worms, indigestion and the diseases of the liver. Seeds of thirty selected trees of *H. cordifolia* were collected from three states of central India - Madhya Pradesh, Maharashtra and Chhattisgarh in the months of April and May. These seeds were sown in mother beds and trays. After 10 days of sowing, seeds began to germinate in trays, while in case of seeds sown in mother beds, it took around 1 month to germinate.

In the early stage of seedlings, frequent watering is required but water logging conditions should not be there. After attaining the age of two months, seedlings from trays were transferred in polybags having media mixture of soil, sand and organic fertilizer in the ratio of 3:1:1. These raised seedlings of different locations will be planted in the fields for further evaluation.



Seeds sowing in trays



Transplanted seedlings in polybags



Watering in seedlings

Shri. Nikhil Verma, Scientist B

## Impact of *Lantana camara* removal

The TFRI project team conducted a tour at the end of July in Bastar Forest Division, Chhattisgarh. We observed that *Lantana camara* was in flowering stage and fruiting stage. It was observed that one fruit stalk has the potential to produce an average of 25 to 33 seeds per stalk. Large number of seeds per stalk per inflorescence is a direct function of its invasion potential into new habitats



**Flowering of  
*Lantana camara***



**Immature fruit  
development**



**Fruit stalks**

However, appreciable regeneration of *Shorea robusta* and *Diospyros melanoxylon* was observed in lantana removed forest areas while *Ougeinia oojeinensis*, *Anogeissus latifolia*, *Grewia tiliaefolia*, *Phyllanthus emblica*, and *Pterocarpus marsupium* were found to be the newly regenerated species in the treated area.



**Enumeration of vegetation**



**TFRI and DWR Team with SFD Staffs, CG**

**Smt. Neelu Singh , Scientist G & GCR; Shri. Rathod Digvijaysinh .U. , Scientist B, and Shri. Ajin Sekhar, Scientist B**

## Assessment and monitoring of Invasive Alien Plant Species

To formulate strategies for management of key Invasive Alien Plant Species in different regions of the country, 5 forest divisions in Madhya Pradesh were visited for phytosociological surveys and soil samples at depths of 0-15 cm, 15-30 cm, and 30-45 cm have been collected from both invaded and un-invaded areas. Prioritization of species for the restoration of the lantana-invaded plot and experimental plot for restoration of lantana removed has been set up at TFRI campus. Charcoal has been made from lantana cellulosic material.



Shri. Neeraj Prajapati, Scientist B

## Refinement of distillation process of *Madhuca longifolia*

Studies have been initiated to refine distillation process of Mahua liquor. Experiments were laid with different concentrations of artificial fermenter and traditional method – without fermenter under anaerobic and aerobic conditions. Liquor was distilled under laboratory conditions. Different physical properties - odour and colour have been assessed. Absorbance (0.051 – 0.095) of different distillates indicates the variation in chemical quality of liquor.



Fermentation of Mahua flowers under aerobic conditions

Fermentation under anaerobic conditions with different concentrations of fermenter

Distillation of fermented Mahua flowers

Distillate

Smt. Neelu Singh, Scientist G & GCR

## Application of Plant Based Pesticides on Insect-Pests of Teak

Field trails were conducted in teak plantation at barbati village near Bargi, Jabalpur, for evaluating the efficacy of different concentrations of target bio-pesticides. Experiments revealed that @ 1% concentration showed 49.06 and 50.88 percent larval mortality in Mahua seed extracts whereas Jatropha seed extracts showed 52.05 and 54.24 percent larval mortality against teak defoliator (*Hyblea puera*) and teak skeletonizer (*Eutectona machaeralis*) respectively.



### Spraying of selected biopesticides against key defoliator insect pests of teak

### Overview of experimental field

Soil based bioassay was carried out at Kanchagaon teak nursery, Mandla (M.P) to determine the effect of mahua and Jatropha seed extracts against white grub attacking teak seedlings. Results showed that, *Jatropha curcas* seed extracts @1 % concentration has 10.0 percent grub mortality, whereas *Madhuca indica* seed extracts showed 7.5 percent grub mortality at 72 hours after treatment.



Collection of White grubs from infested fields

Conducted soil based bioassay of target bio pesticides against white grub

## *Bamboo phyllody or witches broom: An emerging Threat in Dendrocalamus strictus*

*Dendrocalamus strictus* Nees., (Solid or Calcutta bamboo) is an economically significant tree in India. It has been extensively used in the paper industry for various purposes like pulp making, rayons, paper mills, house construction, and furniture. Its susceptibility to phytoplasma diseases, especially involving vegetative propagation, cause significant adverse effect on its yield and, therefore, the socio-economic status of the population engaged in its cultivation.

Phytoplasmas are bacteria lacking cell walls that inhabit the phloem of plants and are naturally transmitted by phloem-feeding insects. These bacteria have not been successfully cultivated in vitro, so they are categorized within the genus “Candidatus (Ca.) Phytoplasma spp.” Plants infected by phytoplasmas exhibit various symptoms, including yellowing, virescence, little leaf, phyllody, witches’ broom, discolourations of leaves or shoots, leaf curling or cupping, shoot proliferation and generalized stunting or decline were observed in Amravati regions of Maharashtra. *Candidatus Phytoplasma aurantifolia* (16SrII group) associated with Witches’ Broom disease of Bamboo (*Dendrocalamus strictus*) in India was reported first time by Amit Yadav et al. (2015).

It is important to constantly examine both the asymptomatic and symptomatic plants, alternative host plants in the bamboo ecosystem and the surrounding areas, and insect vectors, as new variants of the phytoplasma are constantly emerging. Diagnosis of bamboo species for phytoplasma diseases and its management of phytoplasma insect vectors will help to reduce its vulnerability to this disease.



**Infected *D. strictus* plant showing typical witches’ broom / Phyllody symptoms associated with Candidatus Phytoplasma at Amravati, India. Proliferative branches on infected plant (A), single branch (B & C) and node (D) with profuse tillering**

**Dr. Darshan K Scientist B; Mr. Aakash and Dr. S.N. Mishra Scientist C**

## Establishment of progeny trials of *Toona ciliata* and *Chukrasia tabularis* in Central India

*T. ciliata* and *C. tabularis* are fairly fast growing species having distribution in Sub-Himalayan tract, Eastern and Western Ghats and hilly moistened region of the Indian peninsula. To assess the growth performance of these species in central Indian conditions, two trials of *T. ciliata* and one trial of *C. tabularis* were established at Chhindwara and Jabalpur in Aug-Sept, 2022. Each trial consists of 30 families selected from various locations of Uttarakhand, Himachal Pradesh, Assam and Chandigarh. These trials were established by FRI, Dehradun in collaboration with TFRI, Jabalpur.



**Dr. Naseer Mohammad, Scientist E**

## Field testing of *Casuarina* clones under central Indian conditions

Three trials of *Casuarina equisetifolia* clones developed by IFGTB, Coimbatore were established during Aug-Sept, 2021 to evaluate its growth performance in central India under All India Coordinated Research project-01 (Testing and deployment of clones and seed sources of *Casuarina* for different planting environments and end-user applications).



One year old clonal trial *Casuarina equisetifolia* at Jabalpur, Madhya Pradesh



Maintenance of the clonal trial *Casuarina equisetifolia* at Jabalpur, Madhya Pradesh

## Plantation of Tissue culture raised Teak Clones in fields of FDCM, Maharashtra

Institute of Forest Genetics and Tree Breeding, Coimbatore developed improved teak clones through the technique of tissue culture for Quality Teak Production. A plantation with six different clones were established in 5 ha land provided by FDCM, Maharashtra in Gondia forests. The plantation was carried out in Bakalsara Beat (Salekasa), Jamdi Beat (Salekasa), Bagadhbandh (Jamdi), Chichgarh and Arjuni. The plantation was done in Randomized Block Design with 7 clones and 7 replications.



**Plantation of Tissue culture Raised Teak clones at Salekasa Range, Gondia, Maharashtra**

Dr. Fatima Shirin, Scientist G

## Genetic Improvement of *Azadirachta indica* through selection of superior trees

100 Candidate Plus Trees (CPTs) of *Azadirachta indica* A. Juss (Neem), were selected from 8 Agro-climatic Zones. The Average Girth, Tree height, CBH and Average Crown were found to be ranged 10-27 m, 1.5-11.5m, 3.8- 16.4m and 85-26 cm, respectively. The oil content in seeds of selected CPTs ranged 2.66 % to 67.91%.



**Collection of Neem fruits and De-pulping of Neem fruits**



**Morphological measurement of Neem fruits**



**Oil extraction from Neem seeds samples**

## Rehabilitation of Degraded Sites – Iron and Manganese Ore Mines

Selection and recommendation of site-specific short rotation forestry crops for taking up plantation on Iron and Manganese ore mines under consultancy project “Raising short rotation forestry crops for intermittent periods at Dubna-Sakradhi Iron and manganese ore mines in Keonjhar district of Odisha were undertaken”. Soil samples were also collected to determine the physico-chemical properties of soil .



Soil samples collection from Dubna-Sakradhi Iron and manganese ore mines

**Dr. Jangam Deepika, Scientist B**

## Seedling production of *Oroxylum indicum* and *Uraria picta*

Experiments have been laid out to standardize the cultivation techniques of *Oroxylum indicum* (Shyonak) and *Uraria picta* (Prishna parni) - two species of Dashmool group.



Production of seedlings of *Uraria picta*

Production of seedlings of *Oroxylum*

**Dr. Hariom Saxena, Scientist E**

## New value added products from *Carissa carandas* (Karonda)



ACHAR

JAM

SQUASH

CHURANA

MURABBA

KARONDA

KATTI-MITHI GOLI

**Dr. S. C. Biswas, Scientist D**

## Events organised

### Awareness and Demonstration Programmes

TFRI employees participated in 'Parthenium Awareness day' on 16.8.2022 as organized by Dr. Nanita Berry, Head, Forest Extension division at TFRI premise. Parthenium awareness was carried out with the help of poster prepared and shared by the Directorate of Weed Research, Jabalpur. Eradication activities were carried out by all scientists, technical officers, project staffs and other employees of TFRI, Jabalpur.



Students of Navodaya Vidyalaya Jabalpur visited TFRI under the **PRAKRATI** Programme on 29<sup>th</sup> August 2022 where they interacted with the scientists and officers of the institute.

### Activities under Azadi ka Amrit Mahotsava

"Azadi Ka Amrit Mahotsava (AKAM)" Forest ecology & Climate Change Division organized a visit to Kosam Ghat to list out riparian flora on 3<sup>rd</sup> August 2022.



### Establishment of Demo Village

To establish **Demo Village**, Dr. Nanita Berry, Head, Extension organized interactive meeting with farmers and public representatives of Tilhari and Chhewla village on 31<sup>st</sup> August, 2021 to implement TFRI technologies for the benefit of poor farmers for income generation.



## Exposure Visits

Under “Prakriti programme”, students (STD. 10<sup>th</sup> & 12<sup>th</sup>) of Jawahar Navodaya Vidhyalaya, Bargi, Jabalpur visited TFRI Jabalpur on 29<sup>th</sup> August 2022.

Head, Forest Extension division Dr. Nanita Berry coordinated this Programme.

Manish Kumar Vijay, Sci-B delivered a talk on **Single Use Plastic: Possible Alternatives** to the students.



## Visits of Dignitaries



Ms. Priyanka Das IAS, Mission Director, National Health Mission, MP visited Tropical Forest Research Institute, Jabalpur.



Dr. Ashutosh Verma, Professor, IIFM Bhopal visited Tropical Forest Research Institute, Jabalpur.



Faculty members of Banda Agricultural University, Uttar Pradesh visited TFRI on 25<sup>th</sup> August, 2022 under MoU signed with TFRI. Dr. Nanita Berry, Head, Extension division explained the activities carried out by the Institute on various disciplines.



## Training on Lac cultivation



A field training cum demonstration on Lac cultivation was organised at Barkoti kalan and Jaitpur kachiyia societies of IFFDC, Madhya Pradesh under the technical guidance of TFRI Jabalpur. The program was conducted by Dr. Nanita Berry, Scientist F and Head, Forest Extension Division along with Shri Manish Kumar Vijay, Scientist B, TFRI. Smt. Sanju Tripathi, project coordinator, Smt. Droupodi Dhurvey, Junior manager, Shri Dinanath Solanki, Director, Jaitpur Society, Anil Mishra, Secretary, Jaitpur & Barkoti kalan Society were also present in the program. Forty trainees participated in the program which was assisted by Shri Alfred Fransis, STO and Manoj Joshi, Technical Officer, TFRI. Further, lac cultivation techniques will be extended in other societies running under IFFDC to generate additional income to the farmers within 8 months of inoculation of brood lac.

## Training programme on integrated white grub management in teak nursery

One day training programme on integrated white grub management in teak nursery for front line staffs was conducted at Mohagaon Project division at Mandla, M.P which was attended by 35 forest officials. Shri. Rakesh kodape, Divisional manager (D.M) Mandla, inaugurated the training programme. Dr. Mohan C, Scientist- B and Mr. Ram Bhajan Singh. Technical Officer demonstrated eco-friendly management of white grub in teak nursery.



**Interaction on eco-friendly management of white grub with officials of SFD**



**Group photo with participants**



**white grub infested teak nursery at Kanchangaon, M.P.**



**White grubs collected from teak nursery bed at Kanchangaon, M.P.**



Manish Kumar Vijay, Scientist-B presented a **lead paper** on “**Tree Borne Oil Resources: Prospects and Challenges**” and poster on “**Lack of Good Quality Seed: A Key Challenge For the Cultivation of Tree Borne Oil Seeds (TBO)** in the 11<sup>th</sup> National Seed Congress 2022 from 21<sup>st</sup> to 23<sup>rd</sup> Aug 2022, organized by RVSKVV, Gwalior and ICAR-NSRTC .

Dr. Nanita Berry, Head and Training coordinator, organized a training programme on ‘Bamboo Handicrafts’ for Bamboo artisans.



## Workshop/ Seminar/ Important meetings

Four days workshop cum training has been conducted at Tropical Forest Research Institute (TFRI), Jabalpur under the All India Coordinated Research Projects (AICRPs) for Assessment of demand and supply of timber, fuelwood and fodder in India and Valuation of forests for GDP, green GDP and payment of ecosystem goods and services.

Dr. G Rajeshwar Rao, ARS, Director TFRI, Dr. Rajeev Pandey, National Project Coordinator & Scientist, ICFRE (Indian Council of Forestry Research and Education) briefed about the two nationally important projects. This workshop has been attended by 20 scientists, officers and research scholars from Dehradun, Hyderabad, Coimbatore, Ranchi, Jorhat, Shimla, Bangalore, Agartala institutes/centers of ICFRE.



**Monthly Seminar** - “Application of Seed Science and Technology in Forest Restoration: A Way Forward” by Manish Kumar Vijay, Scientist-B

**Monthly Seminar** - "Natural and Anthropogenic Impact on cytology of plants: A cyto-genetical approach" by Kaushal Tripathi, Scientist. B

**Training** - Shri A J K Asaiya Scientist-C attended two days National webinar on “IPR & PATENTING: Road map to make India the next innovation Hub” organized by Aadrsh Mahavidyalaya, Dhamangao, Amaravati University, Maharashtra.

**Seminar** - Dr. Nanita Berry Scientist-F and Shri A J K Asaiya Scientist-C attended online seminar on “Agroforestry for climate change mitigation” organized by FRI, Dehradun

**Workshop** - Dr. Darshan K, Sci- B, Participated "MycoAsia - Fungipedia Workshop on Mushroom Cultivation for Beginners" (Online).

## NEW PUBLICATIONS

### Research papers

- Khobragade N. D. and Patel P. 2022 . Effect of pretreatment on seed germination and seedling growth of *Terminalia chebula* Retz. *International Journal of Applied and Universal Research*, Volume IX, Issue II, March – April, 9- 13 pp.
- Khobragade N. D. and Kumbhare V. 2022. Nutritional composition of *Buchnanian lanzan* seeds collected from candidate plus trees. *Indian Journal of Nutrition*, Vol. 9, issue 1.
- Saxena, H.O., N. D. Khobragade , Samiksha Parihar, M. Kundu , G. Rajeshwar Rao and Ganesh Pawar. 2022. Chemical and morphological variations in *Terminalia bellirica* (Gaertn.) Roxb. – a species of commercial ayurvedic formulation triphla from Central India. *Environment Conservation Journal*, Volume I, issue 4.
- Mohammad, N., Saravanan, S., & Shirin, F. (2022). Heartwood-sapwood-bark profiles and association studies in *Pterocarpus marsupium* Roxb., a vulnerable antidiabetic forestry species of sub-tropical forests. *Scientia Forestalis*, 50, e3811. <https://doi.org/10.18671/scifor.v50.37> (**In press**)
- Saxena HO, Parihar S, Pawar G and Sahu VR, 2022. High performance thin layer chromatography method development and validation for quantification of glucuronic acid in gum samples of *Sterculia urens* Roxb. *JPC–Journal of Planar Chromatography–Modern TLC*, 35: 153-159.
- Saxena HO, Kobragade ND, Parihar S, Kundu M, Rao GR & Pawar G, 2022. Chemical and morphological variations in *Terminalia bellirica* (Gaertn.) Roxb. – a species of commercial ayurvedic formulation Triphla from central India. *Environment Conservation Journal*, 23(1&2): 410–416.
- Saxena HO, Parihar S and Pawar G, 2022. Quantitative estimation of Betulin in different plant parts of *Dillenia pentagyna* Roxb. through validated HPTLC method. *Indian Forester*, 148(4): 441-446.

### Other Publications

- Rao, G. R, Sekhar A, and Vijay M. K. 2022. Tree borne oil resources: Prospects & challenges. *Lead paper published in the book released during 11th National Seed Congress 2022 organized by RVSKVV and ICAR-NSRTC*
- Mohan C. and S. Sowmya Priya. 2022. Strategies for Ecofriendly Insect Pest Management – An overview. *Kaalnadai Velanmai in Tamil Language*. 4 (1): 40- 43.
- Mohan C. 2022. Recent Advances in Stored Product Pest Management. *Agriculture and food e Newsletter*. 4 (7): 380- 385.
- Irshad Ali Saudagar and Fatima Shirin . 2022. Bamboo advocacy for central India. *News letter of the International Society of Tropical Foresters*. Voll.-11 Issue-2.

## Plant Species and number Available for Sale at Genetics and Tree Improvement Division, TFRI, Jabalpur

### Improved Varieties- Cost per plant- Rs. 50/ plant

S. No.	Species	Number of Plants
1.	<i>Rauvolfia serpentina</i> TFRI RS-1 (Sarpagandha)	200
2.	<i>Rauvolfia serpentina</i> TFRI RS-2 (Sarpagandha)	150

### Bamboos Species- Rs. 25/plant

S. No.	Species	Number of Plants
1.	<i>Bambusa bambos</i> (Katang bans)	1350
2.	<i>Bambusa vulgaris</i> (var. green)	110
3.	<i>Bambusa nutans</i>	75
4.	<i>Dendrocalamus strictus</i> (Lathi bans)	940
5.	<i>Dendrocalamus longispathus</i>	100

### Tree Species and Medicinal Plants- Rs. 25/ plant

S. No.	Species	Number of Plants
1.	<i>Tectona grandis</i> ( Teak, Sagoan)	200
2.	<i>Dalbergia latifolia</i> ( Kala shisham, Rosewood)	200
3.	<i>Celastrus paniculatus</i> (Malkagini, Jyotishmati)	100
4.	<i>Plumbago zeylanica</i> (Chitrak)	100
5.	<i>Oroxylum indicum</i> (Shivnag)	50
6.	<i>Tamarindus indica</i> (Imli)	150
7.	<i>Azadirachta indica</i> (Neem)	50



## Guest House facilities and Charges

S.No.	Category of Person	Rent per day while on Govt. Duty (Rs.)		Rent per day while not on Govt. Duty (Rs.)	
		Room	Suit	Room	Suit
1	A) Officials of ICFRE and in institutes B) Consultants and research Fellow at ICFRE and its institutes and FRI Deemed Universities C) Officials and experts of MoEF&CC, New Delhi D) Officials of SFDs E) Ex- employees of ICFRE and Ex-Deputationist	150	200	200	200
2	Family members of present /ex a) ICFRE Employees b) ICFRE Deputationist			200	300
3	a) Officials of Autonomous bodies , Universities under thtas FRI Deemed University b) Officials of Central/State Government other than SFDs	200	300	400	500
4	Others			800	750



Maintenance charges in addition to above rent will be applicable as follows

Accommodation type	Maintenance charge including A/C /Heater Charges
Room	200
Suit	250

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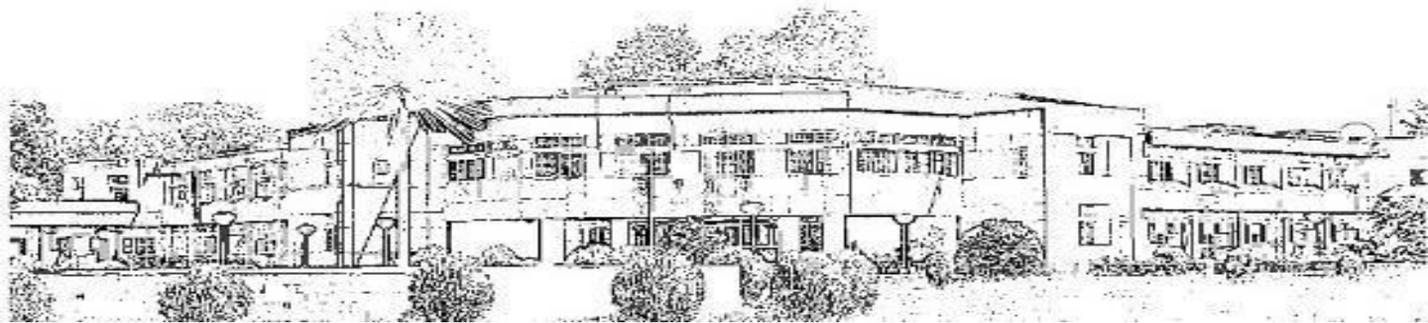
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## ABOUT THE INSTITUTE

Tropical Forest Research Institute ,Jabalpur (Madhya Pradesh ) came into existence in April 1988,to provide strong research support to sustainable development of forest and forestry sectors in central India comprising the states of Madhya Pradesh, Chhattisgarh and Maharashtra.

It is one of the nine Regional Research Institutes under the Indian Council of Forestry Research & Education , Dehradun (Uttarakhand ) .

Forest Research Centre for Skill Development ,Chhindwara , came into existence on 30th March 1995.It was declared on 3<sup>rd</sup> January 1996,as satellite Centre of Tropical Forest Research Institute, Jabalpur.

## CORE RESEARCH AREAS

- ❖ Eco-restoration of Vindhyan, Satpura and Maikal hills and Western Ghats, Rehabilitation of mined areas.
- ❖ Development and Demonstration of Agroforestry Models
- ❖ Forest Protection
- ❖ Biofertilizers and Biopesticides
- ❖ Non-Wood Forest Products
- ❖ Biodiversity Assessment, Conservation and Development
- ❖ Sustainable Forest Management
- ❖ Planting Stock Improvement
- ❖ Climate Change & Environment Amelioration
- ❖ Forest Products Development

