

# **Seed Certification Division**

## **SFRTI ,Raipur**



**Presented by**  
Pragati Patel(Intern)  
Ruma Patel (Intern)

# MANDATE-

- Setup a Seed lab for Seed testing , Seed germination & Seed Certification.
- Seed treatment for prevent diseases and enhance seed productivity of forestry sp.
- Seed Collection of all type of Endangered forest plant & Medicinal plant species.
- Listing of high yielding plant seed and their particular range area in C.G .
- Establish in-situ and ex-situ Conservation (Field gene bank & Seed bank)for important trees seed sp.
- Training and Workshop on seed technology and management of seed production areas for field foresters

➤ **Setup a Seed lab for Seed testing , Seed germination & Seed Certification.**

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
( Seed testing )- Regular activity <b>(SFRI Jabalpur)</b>	Dr. Archana Sharma Scientist 'E' <a href="mailto:archanasfri@gmail.com">archanasfri@gmail.com</a> 9685617272	Planning, lab setup, routine scheduling, coordination, monitoring, and ensuring sustainability.
<b>Project</b> -Protocol for quality testing of sandalwood and market potential for seed, oil, wood. <b>(Forest college &amp; research institute , tamil nadu Agriculture university, mettupalayam)</b> <b>2021-2022</b>	Dr. Sreedhar Bodiga & Dr. Kapil Sihag	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>Studies on maturation and viability of seeds of five important tropical species: <i>Adina cordifolia</i>, <i>Mitragyna parviflora</i>, <i>Lannea coromandelica</i>, <i>Ougeinia oojeinensis</i> and <i>Anogeissus acuminata</i> for effective collection and seed storage. (TFRI Jabalpur)</p> <p><b>Year – April 2016- March 2021</b></p>	<p>Dr. Maitreyee Kundu, Sc-F (Maitreyee Kundu,</p> <p><b>Journal Article</b>-Evaluation of seed quality during maturation for effective collection. ENVIS Forestry Bulletin 8: 56-63. ENVIS Centre of Forestry, Forest Research Institute, DehraDun, 2008.)</p>	<p>Studies on seed collection, maturity stages, viability, and storage techniques of these species.</p>
<p><b>AICRP-10:</b> Developing seed testing and seed storage protocols of selected forestry species from diverse forest types.</p> <p><b>Duration:</b> 5 years</p> <p><b>Project Code:</b> CAMPA-AICRP 10/Developing seed testing &amp; storage protocols/GTI-168</p> <p><b>(Advanced Research center for Bamboo &amp;Rattan , Aizawl)</b></p>	<p>Dr. M. K. Singh, Scientist-E</p>	

<p><b>ON GOING PROJECT-</b></p> <p>Developing seed testing and seed storage protocols of selected forestry species from diverse forest types.</p> <p><b>Duration:</b> 5 years ( 2020-2025 )</p> <p><b>Project Code:</b> CAMPA-AICRP 10/Developing seed testing &amp; storage protocols/GTI-168</p>	<p>Dr. M. K. Singh, Scientist-E <b>(Rain Forest Research Institutes, Jorhat)</b></p>	
<p>Standardization of methodologies for collection of seed, its handling, storage, testing and certification of seeds of important tree species of HP. PI: Sh. K.S. Thakur (April, 2002 to March, 2005).</p>	<p>K.S. Thakur <b>(ICFRE- Himalayan Forest Research Institute.)</b></p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>•Standardization of methodology for seed collection, seed handling, storage and breaking seed dormancy in <i>Juniperus polycarpus</i> C. Koch and <i>Fraxinus xanthoxyloides</i> (Wall. Ex G. Don) DC. PI: Sh. P.S. Negi (April, 2006 to March, 2011).</p> <p><b>Ongoing Project-</b> Developing seed testing &amp; seed storage protocols of selected species from diverse forest types. (AICRP-10). PI: Sh. P.S. Negi (2019-2025).</p> <p><a href="#">Effect of pre-sowing treatments on seed germination and seedling vigour index of <i>Juniperus polycarpus</i> C. Koch</a> PSNS Sharma</p>	<p>P.S. Negi <b>(ICFRE- Himalayan Forest Research Institute.)</b></p> <p><a href="#">Effect of Storage Containers and Conditions on Seed Viability of <i>Fraxinus xanthoxyloides</i> (Wall. ex G. Don) Dc.): A Lesser Known Tree Species of Western Himalaya</a> PS Negi, S Sharma, J Prasad <a href="#">Study on effect of gibberellic acid treatments on germination behaviour of <i>Fraxinus xanthoxyloides</i> (Wall. Ex G. Don) DC</a> PSNS Sharma Indian Journal of Forestry 34 (4), 409-413</p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Effect of Various Pretreatment on Seed Germination of Fresh and Stored Seeds of <i>Tectona grandis</i> (Teak) (SFRI Jabalpur) Feb.-2015	Dr. Archana Sharma Scientist 'E' <a href="mailto:archanasfri@gmail.com">archanasfri@gmail.com</a> 9685617272	<ul style="list-style-type: none"> <li>Standardize seed pre-treatment techniques for improved germination of <i>Tectona grandis</i>.</li> <li>Develop storage protocols to maintain seed viability.</li> </ul>
Improved seed germination and seedling quality through Pelletization and developed 'ready to use' pelleted seeds of important tree sp. (IFGTB-CO)	Dr. R. Anandalakshmi <a href="mailto:anandalakshmi11@gmail.com">anandalakshmi11@gmail.com</a> 9345569036  <a href="#">Seed pelleting and aerial seeding</a> Sivakumar, R Anandalakshmi, RR Warriar, BG Singh, K Subramanian Seed Quality Enhancement: Principles and Practices 207	A systematic research protocol focused on pelleted seed preparation, testing, and field trials for local tree species.

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>Debi, C., Parkash, V. (2015). Seed source and habitat variation affect seed germination in <i>Oroxylum indicum</i> (L.) Benth. ex Kurz: An important threatened medicinal tree. <i>International Journal of Life Sciences and Technology</i>, 8(1):1-9.</p> <p><b>(Advanced Research center for Bamboo &amp; Rattan , Aizawl)</b></p>	C. Debi , V. Parkash	
<p>Study on seed source variation for germination and seedling growth and establishment of seedling seed orchard of <i>Michelia champaca</i>. 2017</p>	<p>Md. Ibrahim, Scientist-C <b>(Rain Forest Research Institutes, Jorhat)</b></p>	



Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p><a href="#">Influence of seed priming on germination and seedling growth of Adeanthera pavonina in sub-humid region of West Bengal, India</a>SG Vineeta, NA Pala, S Dobhal, S Chakravarty Indian J Trop Biodiv 26 (1), 87-91</p> <p><a href="#">Seed germination protocol for <i>Melia dubia</i> Cav. (syn. <i>M. composita</i> Benth.)</a>.AK Ashok Kumar, PS Priyanka Shrivastava, RK Rahul Kumar, ...</p>	<p>Dr. Tisu Tayeng</p> <p>Dr. Shivani Dobhal</p> <p><b>(College of Horticulture and Forestry ,Central Agricultural University ,Pasighat Arunachal Pradesh)</b></p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<b>Research Paper –</b> Sharma, M., Chauhan, P.S., Pandey, S.B.S., Bhatnagar, P., Sharma, M.K. and <b>Nagar, B.</b> (2020). Seed Germination Behaviour and Seedling Attributes of <i>Buchanania lanzan</i> (Spreng.) in South-Eastern Rajasthan. <i>The Pharma Innovation Journal</i> 9(1): 123-128.	Dr. P.S. Chauhan <b>(College of Horticulture &amp; Forestry ,Maharana Pratap University , Jhalawar, Rajasthan)</b>	
<b>Research Journal-</b> Effects of seed orientation & sowing depths on Germination seedling vigour in Mahua. Indian Journal of Forestry 45(2),pp.82-86,2022	Poomaruthai Masilamani , Subramanian venkatesan , Tamilmani Eevera	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<b>Journal-</b> Effect of Seed Size on Seed Germination & Seedling vigour Index of <i>Abies spectabilis</i> (D.Don)spach. <b>Himalayan Forest Research Institute,</b> <b>Campus,Panthaghati,shimla-171 013(H.P)</b>	PS Negi & Sandeep Shrma	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>The seeds Supplied will be certified for source , purity , germination % ,&amp; no. of seed per kg/g.</p> <p><b>Available sp.- Teak, Rosewood, Bamboo, rattan &amp; other trees Sp. (KFRI)</b></p>	<p>Dr. P Sujanapal</p> <p><a href="mailto:sujanapalp@gmail.com">sujanapalp@gmail.com</a></p> <p>9447851737</p>	<p>Development of SOP for Seed Certification to ensure quality Seed procurement .</p>
<p>Seed Certification-Regular activity</p> <p><b>(SFRI Jabalpur)</b></p>	<p>Dr. Archana Sharma</p> <p>Scientist 'E'</p> <p><a href="mailto:archanasfri@gmail.com">archanasfri@gmail.com</a></p> <p>9685617272</p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Creation of seed database on economic-ally important forestry species of Jharkhand, aiming at functioning of a forestry seed certification agency (2008-2011).	Dr. Sanjay Singh, Scientist – C <b>(Institute of Forest Productivity , Ranchi)</b>	
<b>Research paper</b> -Organic Seed production and Certification with special reference to Rajasthan. Advances in Organic Farming,173-190, 2021	Kailash chandra, Subhash chand, at all.	

## Seed treatment to prevent diseases and enhance seed productivity of forestry sp.

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Principles and practices of seed testing & pre-sowing treatments Training conduct – duration 5days (KFRI)	Dr. RC Pandalai <a href="mailto:rcp@kfri.res.in">rcp@kfri.res.in</a> 9447080848 [PDF] <a href="#">Manual of seeds of forest trees, bamboos and rattans</a> KC Chacko, RC Pandalai... - ... Institute, Peechi. 331p, 2002 - docs.kfri.res.in	<ul style="list-style-type: none"> <li>Organizing workshops and training programs for farmers and seed producers.</li> </ul>
<b>Research paper</b> -Chauhan P.S., Sharma Minita, Pandey S.B.S., Bhatnagar P., Sharma M.K. and Nagar Bhuvnesh (2020) Effect of seed treatments on plus trees of Buchanania lanzan in South-Eastern Rajasthan. Journal of Pharmacognosy and Phytochemistry, 9(4): 301-303.	P.S. Chauhan , Minita Sharma <b>(College of Horticulture&amp; forestry,maharanapratap university ,jhalawar,rajasthannow with agriculture university,kota,rajasthan).</b>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<b>Research journals-</b> Evaluating pre-sowing seed treatment on the germination of important forest fruit plant sp. Crop Research 58(5and6),251-259,2023	P Hazarika, Ajaykumar, Dhrubajyoti Das <b>(Rain Forest Research Institute,sotai,jorhat)</b>	

## Seed Collection of all type of Endangered forest plant & Medicinal plant species.

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>To promote plantation of rare endangered threatened and wild medicinal tree species for future plantation programme. (SFRI, Jabalpur) <b>June -2019</b></p>	<p>Dr. Archana Sharma Scientist 'E' <a href="mailto:archanasfri@gmail.com">archanasfri@gmail.com</a> 9685617272 <a href="#">Ex-situ conservation of indigenous, threatened and ethno-medicinal diversity of forest species</a> OP Chaubey, A Sharma, G Krishnamurthy - Int J Bio-Sci Bio-Technol, 2015 - gvpress.com</p>	<p>"Conservation of Endangered Species" project at SFRTI through research with reference to ex-situ &amp; in-situ conservation .</p>
<p>Study on ecophysiology of seed germination and seedling survival for restoration of natural regeneration of four threatened/ rare species of Central India. (TFRI Jabalpur) <b>Year – January 2017- March 2022</b></p>	<p>Dr. Maitreyee Kundu, Sc-F <a href="#">Collection, germination and storage of seeds of Saraca asoca (Roxb.) Willd</a> M Kundu, S Tiwari, M Haldkar - Journal of Applied Research on Medicinal ..., 2020 - Elsevier</p>	<p>study of seed germination and seedling survival for the restoration of threatened species in Central India, emphasizing ecological restoration and conservation.</p>



Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p><b>Project</b>-Development of Seed Production Areas and haploid plants of <i>Commiphora wightii</i> (Arnott) a Rare and Threatened Medicinal Plant. (<b>Arid Forest research institute , jodhpur</b>) <b>2016-2019</b></p>	<p>Dr. U.K. Tomar</p> <p><a href="#">Seed parameters study in <i>Commiphora wightii</i> (Arnott)–an important medicinal tree of arid and semi-arid regions of India</a>M Choudhary, UK Tomar</p>	
<p><b>Object</b> To produce true to type quality planting material by forest survey, screening of valuable propagation material and conservation of RET species of forest genetic resources .</p>	<p>Dr. P.S. Chauhan (<b>College of Horticulture &amp; Forestry ,Maharana Pratap University , Jhalawar, Rajasthan</b>)</p>	

<p><b>Project-</b> Establishment of an arboretum of rare &amp; Characteristic sp. of Western Ghats 2015- 2020.</p>	<p><b>Dr. S. Vennila</b></p> <p><b>(Forest College and Research Institute , Tamil Nadu Agricultural University, Mettupalayam)</b></p>	
<p><b>Research journal-</b> Threatened medicinal plants sp. From chhattisgarh.</p>	<p>Alok kumar chandrakar <b>(Guru Ghasidas Vishwavidyalaya, Bilaspur , C.G.)</b></p>	

## Listing of high yielding plant seed and their particular range area in C.G .

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Studies on the effect of different level of seed collection on natural regeneration of Sal ( <i>Shorea robusta</i> ) in Chhattisgarh. (TFRI – Jabalpur)	Shri N. P. S. Nain	

## Establish in–situ and ex-situ Conservation (Field gene bank & Seed bank)for important trees seed sp.

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<ul style="list-style-type: none"> <li>•The institute has a well – established seed bank in order to facilitate ex-situ conservation of forestry seed . <b>ex- Teak plant</b></li> <li>•Seed are processed, extracted , graded &amp; tested for their germination.</li> </ul> <p>( IFGTB-CO)</p>	<p>Dr. R. Anandalakshmi  <a href="mailto:anandalakshmi11@gmail.com">anandalakshmi11@gmail.com</a>            9345569036  <a href="#">[PDF] STATE OF FOREST GENETIC RESOURCES IN INDIA</a>            ..., TP Raghunath, <a href="#">RSC Jayaraj</a>, <a href="#">R Anandalakshmi</a>... - Citeseer</p>	<p><b>Establish and maintain seed bank:</b> Ensures ex-situ conservation.</p>
	<p><a href="#">Threatened tree species of the Western Ghats: status, diversity and conservation</a>            ..., B Gurudev Singh, <a href="#">R Anandalakshmi</a> -  <b>Conservation</b> and ..., 2020 - Springer</p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Conservation of RET Species of Chhattisgarh – <i>Plumbago zeylanica</i> and <i>Celastrus paniculatus</i> and Production of quality Planting Material . (TFRI Jabalpur) – 2019-2022	Dr. Fatima Shirin, Sc.- F <a href="mailto:shirin@icfre.gov.in">shirin@icfre.gov.in</a>	<b>Study on RET species and its conservation in C.G.</b> <i>Asparagus racemosus</i> , Safed musli, <i>Acorus calamus</i> , <i>Plumbago zeylanica</i> , <i>Cleistanthus collinus</i> , Rasna ( <i>Pluchea lanceolata</i> )

<p>"AICP for genetic improvement of Teak".</p> <p>(i) Selection of plus trees, raising their progeny trials and establishing germplasm bank.</p> <p>(ii) Development of management practices of teak seed production areas, seedling seed orchards and clonal seed orchards. (TFRI &amp; SFRI, Jabalpur .(TFRI Jabalpur)</p> <p><b>Year- April 2012- March 2022</b></p>	<p>Dr. Pramod Kumar, Sc-C  <a href="mailto:pramodk@icfre.org">pramodk@icfre.org</a>  7612744141</p>	<p><b>Optimize seed processing and testing techniques: Germplasm, promotes healthy seedlings for C.G.</b></p>
<p><b>Project</b>-Germplasm collection, conservation &amp; mass multiplication of selected medicinal plants of North East India.</p> <p><b>(Advanced Research center for Bamboo &amp;Rattan , Aizawl)</b></p> <p><b>2005</b></p>	<p>Dr. K.C.Pathak</p>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<b>Project</b> -Inventorization and ex-situ conservation of bamboo and rattan resources of Mizoram, Tripura and Barak Valley of Assam. <b>(Advanced Research center for Bamboo &amp;Rattan , Aizawl)</b> <b>2012</b>	Dr. T.C. Bhuyan	
<b>Project</b> -Documentation of Grass Species of Telangana State and establishment of ex-situ conservation cum seed stand of palatable grass species. ▪Establishment of ex-situ conservation plot (Germplasm bank) of wild edible fruit plants of Telangana. <b>2021</b>	Dr. Chiranjeeva Reddy <b>(Forest college &amp; research institute , tamil nadu Agriculture university, mettupalayam)</b>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Exploration and conservation of genetic resources of selected rare and endemic plants of Northeast India March, 2013	Shri H.R. Bora <b>(Rain Forest Research Institutes, Jorhat)</b>	
Creation of germ plasm resource bank of threatened medicinal plants of Darjeeling Himalayas (2003-2008).	Sh. S. N. Mazumder, FRO <b>(Institute of Forest Productivity , Ranchi)</b>	



Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Genetic improvement and conservation of Chironji ( <i>Buchnaniania cochinchinensis</i> Lour) in Central and Eastern India. (2018-2021).	Shri. Sanjeev Kumar, Scientist-E  <b>(Institute of Forest Productivity , Ranchi)</b>	
Genetic improvement of <i>Pterocarpus marsupium</i> Roxb through germplasm collection and conservation in eastern India (2019-24). <a href="#">Assessing potential habitat distribution range of the endangered tree species Pterocarpus marsupium Roxb. Under the climate change scenario in India</a>	Dr. Yogeshwar Mishra, Scientist- G  <b>(Institute of Forest Productivity , Ranchi)</b>	

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
Collection, conservation and evaluation of <i>Melia dubia</i> germplasm from North Bengal, Odisha Hills and other parts of India for identification and release of superior clones.(2013-18 2019-22).	Dr. Aditya Kumar, Scientist- D  <b>(Institute of Forest Productivity , Ranchi)</b>	

## Training and Workshop on seed technology and management of seed production areas for field foresters.

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<ul style="list-style-type: none"> <li>▪Seed stand.</li> <li>▪Establishment of Seed Production Area (SPA).</li> <li>▪Seed collection.</li> <li>▪Knowledge of seed maturity.</li> <li>▪Seed extraction and cleaning.</li> <li>▪Insect and disease problem.</li> <li>▪Seed storage.</li> <li>▪Seed certification.</li> <li>▪Pre sowing treatments.</li> </ul> <p><b>(SFRI Jabalpur)</b> <b>August -2015</b></p>	<p>Dr. Archana Sharma Scientist 'E' <a href="mailto:archanasfri@gmail.com">archanasfri@gmail.com</a> 9685617272</p>	<p>Training Programme on seed technology and management of seed production areas for field foresters.</p>

Research done by Institute	Priorities of concern Name of Scientist	Priority research area for SFRTI
<p>To impart training on seed technology and nursery management to field foresters.</p> <ul style="list-style-type: none"> <li>▪Seed collection &amp; disposal.</li> <li>▪Seed testing &amp; Certification.</li> </ul>	IFGTB-CO	
Training Program on seed production , Testing and storage in field and vegetable crops.	Dr. Shiv kumar yadav ICAR-IARI	