Calendar

2010

Short Term Training Courses

FOREST RESEARCH INSTITUTE

(Indian Council of Forestry Research and Education) Dehradun

Short Term Training Courses at FRI, Dehradun

Set in the sylvan surroundings of Doon Valley and having a history of about a century of forestry research is an ideal seat for learning in forestry. FRI contributes the research perspectives focusing on different aspects of forestry research to different stake holders. The manifold research programmes related to enhancement of forest productivity through quality seed and planting material, Agroforestry, medicinal & aromatics plants, eco-rehabiliation, afforestation techniques for stress sites, bamboo & bio fertilizers, evaluation & utilization of plantation timber to name a few.

Training as part of extension is an important function of the institute towards capacity building. The institute organizes Short Term Training Courses (STTC) in twenty two disciplines to keep managerial level officers, supervisory staff and field officers abreast with recent research developments in forestry and to transfer the latest technologies. In addition to this Short Term Low-Cost Training courses will also be organized as provided separately in this brochure.

The faculty to impart these training consist of highly qualified, experienced and skilled professionals and researchers. The Institute has a well-developed infrastructure of laboratories, computer center, library, herbarium, arboreta, nurseries and experimental field areas for conducting research and training programmes. Excellent **boarding & lodging** facilities are available at the Scientists Hostel and Officers Rest House of the Institute, with adequate means of recreation.

Course Contents

1. **Hi-Tech Nursery & Plantation Management:** Choice of species for different industrial purposes; Seed certification & testing; Improved nursery tools & practices. Tissue culture; Soil amendments & Nutrient management; Vermi composting; Application of mycorrhizae, Plus tree selection, Identification of germplasm through molecular markers, Design & management of avenue plantations/ Urban forestry; Protection measures for nursery stock, Legal issues in plantations forestry & Field extension.
2. **Improved Seed & Nursery Technology:** Seed technology & Seed Certification; Nursery technology & management, Nursery diseases & management, Management of important insects-pests of forest nurseries, Tree improvement in forestry-challenges scope & strategies, Vegetative propagation of trees, Assembling hardware for clonal propagation, Landscape-cum-bio-aesthetic planting, Raw materials for paper & pulp industry, Forest Certification in developing coutries and role of medicinal plants in plantation forestry.
3. **Tree Seed Technology:** Demonstration & Familiarization of Seed Testing Lab, Practical demonstration of Seed sampling, Purity, Seed Moisture & Seed weight determination, Seed collection, extraction & processing; Selection of Plus Trees, Hybridization, Seed Dormancy & germination, Seed storage, Seed treatment & testing of germination, Viability tests; Seed physiology; Development of modern nursery; Seed pathology & Seed entomology.
4. Plywood Manufacture: Plywood raw materials both wood and adhesives; Manufacture of veneers, plywood, block board and flush doors, their properties and testing; Preparation and testing of adhesives, plywood, laminated veneer lumber (LVL); Impreg and compreg and other development in panel products.
5. **Classification and Grading of Timber:** Testing of wood and classification of timbers for different end uses; Defects in wood, their measurement and evaluation; Visual grading of timber; Machine grading of timber.
6. **Wood Seasoning:** Importance of Seasoning; Equilibrium moisture content; Moisture content values and tolerances for end products; Influence of climatic zones on moisture content; Seasoning schedules, seasoning kilns (solar, steam, vacuum press drying, dehumidification drying etc.); Other seasoning methods like chemical seasoning and seasoning of plantation species like Eucalyptus and Poplar.
7. **Finger jointing for Economic and Efficient Wood Utilization:** The Finger jointing technique uses, design aspects, adhesive aspect, machinery, structural and non-structural usages, glulams, strength aspects, role of moisture and seasoning finishing aspects, hands-on practices.
8. **Development of Green Belts:** Green belts in environmental amelioration; Selection of species; Pollution abatement through green belts; Use of MPTs; Green belts as buffer zone to Pas' Ethno botanical importance etc.
9. **Management of Forest Herbarium and Arboreta:** Floristic studies; Herbarium techniques; Botanical nomenclature; Distinguishing characters of plants in the field; Identification of plants in herbarium with the aid of flora; Layout, maintenance and management of herbarium, botanical garden and arboretum etc.

10. **Identification of Timber through Field & Lab Orientation:** Methods of identification (physical properties and internal structural features); Field identification of 25 commercial timbers; Computer assisted wood identification.

11. **Urban Forestry and Landscaping:** Introduction to urban forestry; Nature and management of urban forestry, benefits of urban forests; urban silviculture, etc.

12. **Bamboo propagation and clonal nursery management:** Introduction to Bamboos and their utilization in rural and urban society, Germplasam collection, Establishment and maintenance of genetic resources of bamboos, Infrastructure development for bamboo propagation, Mass multiplication of important bamboos through low cost clonal technologies, Farmers friendly technologies for bamboo multiplication, Management of bamboo clonal nursery etc.

13. **Tissue culture of important forest trees, bamboos and medicinal plants:** Plant tissue culture principles, fields of application, progress and prospects with special reference to tree crops; Advantages of tissue culture, tissue culture a non-conventional means of mass multiplication, necessity of plant tissue culture etc.

14. **Genetic Improvement for Enhanced Productivity:** Improvement of productivity through genetically improved planting; Application and impact of various genetic tools on enhanced productivity of plantation forests; Provenance selection, Plus tree selection, Seed production area and seed orchards; Establishment and up-gradation and production population including Clonal and Seedling Seed Orchards; Judicious utilization of seed from production populations (SPA,CSO, SSO).

15. **Clonal forestry for higher economic returns:** Clonal forestry in modern tree improvement and higher productivity; Infrastructure and techniques for rejuvenation of trees and clonal propagation; Economics of clonal plantations and their role in industries; Nursery production, transportation and maintenance of clonal planting stocks; Successful case studies and replication in Indian context; Biotechnology tools for faster genetic improvement through clonal forestry.

16. **Monitoring and evaluation of the health of urban trees and plantations:** Tree health surveillance, Diagnostics of tree health, Factors affecting tree health, Hazardous trees, Nutritional deficiencies, Pathological problems, Entomological problems, Manmade hazards, Remedial measures, Practical field demonstration.

17. **Molecular tools for identification and variability of pathogenic and medicinally important fungal species**: Importance and scope of studying fungal variability, Disease resistance and molecular variability, Yield of bioactive principles by medicinally important fungi and their molecular variability, Breeding disease resistant germplasm, Molecular tools in identifying reistant host germplasm. Demonstration of RAPD-PCR, amplification of ITS region of rDNA, Beta tubulin amplification and development of fungal species specific primers.

18. **Practical approach for raising healthy nurseries and plantations:** Signs and symptom of unhealthy planting stock, Pathological, entomological and nutritional problems in nurseries and plantations, Cultural practices, biological and chemical control of diseases, resistant host germplasm, field application of recommended practices.

19. **Value Addition of Non Wood Forest products (NWFPs):** Scope, Utilisation & market potential of some commercially important NWFPs; Tannins & dyes Methods of extraction and dyeing, Evaluation of fastness properties and determination of color coordinates, Practical demonstration; Medicinal plants & biopesticides Introduction to methods for preparation of active extracts, their purification and characterization, Practical demonstration on laboratory methods for extraction and purification; Edible & non-edible oil seeds Introduction to methods for their isolation, characterization, physico-chemical properties, value addition and applications; Gums- Different classes of gums, isolation, physico-chemical properties, value addition and uses; Resins & Oleoresins Type of resins, methods of resin tapping, value addition and application; Aromatic plants (Essential oils) \ Methods of isolation/extraction, Quality assessment, Value addition; Field visit to Herbal Research & Development Institute, Centre for Aromatic Plants, Govt. Uttarakhand, Selakui for practical demonstration of extraction of essential oil.

20. **Eco-Restoration of Wastelands:** Land use and land capability; Ethnobotanical and Ecological approach soil working techniques; Moisture conservation practices; Role of geology; Nursery development.

21. **Environmental problems & Bioremediation:** Environment & Forestry; Identification of Environmental problems; Environmental pollution; Air pollution-sources, effects and mitigation; Water pollution sources, effect and mitigation; Noise pollution sources, effect and mitigation; Environmental Impact Assessment.

22. **Value addition, Cultivation and Marketing of Medicinal Plants:** Cultivation and management of some important medicinal herbs; Status of plant biodiversity; Demand for industries, tribal sustenance and socio-economic need; *Ex- situ* and *in- situ* conservation of species of economic importance; Implications of regulations of WTO and TRIPS.

Calendar of Short Term Training Courses - 2010

NAME OF THE COURSE	NAME OF COURSE DIRECTOR & DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1. Hi-Tech Nursery & Plantation Management	Dr. V.R.R. Singh **Silviculture**						7-16						
2. Improved Seed & Nursery Technology	Dr. V.R.R. Singh **Silviculture**									20-24			
3. Tree Seed Technology	Ms. Manisha Thapliyal **Silviculture**					17-21							
4. Plywood Manufacture	D.P. Khali **Forest Products**								9-13				
5. Classification & Grading of Timber	Dr. Y.M. Dubey **Forest Products**								23-27			22-26	
6. Wood Seasoning	N.K. Upreti **Forest Products**										25-29		
7. Finger Jointing for Economic and Efficient Wood Utilization	Dr. Kisharn Kumar V.S. **Forest Products**										4-8		
8. Development of Green Belts	Dr. Veena Chandra **Botany**								16-20				
9. Management of Forest Herbarium & Arboreta	Dr. Veena Chandra **Botany**					10-14							
10. Identification of Timber through Field & Lab Orientation	Dr. Sangeeta Gupta **Botany**					24-28							
11. Urban Forestry & Landscaping	Dr. Anup Chandra **Botany**											15-19	

Forest Research Institute, Dehradun

NAME OF THE COURSE	NAME OF COURSE DIRECTOR & DIVISION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
12. Bamboo propagation and clonal nursery management	Dr. Subhash Nautiyal **Botany**				19-23								
13. Tissue Culture of important forest trees, bamboos and medicinal plants	Dr. Ajay Thakur **Botany**												13-17
14. Genetic Improvement for Enhanced Productivity	Dr. H.S. Ginwal **G&TP**								23-27				
15. Clonal Forestry for Higher Economic Returns	Dr. Ashok Kumar **G&TP**						14-18						
16. Monitoring and evaluation of the health of urban trees and plantations	Dr. N.S.K. Harsh **Pathology**								23-27				
17. Molecular tools for identification and variability of pathogenic and medicinally important fungal species	Dr. Amit Pandey **Pathology**											15-19	
18. Practical approach for raising healthy nurseries and plantations	Dr. Y.P. Singh **Pathology**									20-24			
19. Value addition of Non Wood Forest Products (NWFPs)	Dr. Sanjay Naithani **Chemistry**							19-23					
20. Eco-Restoration of Wastelands	Dr. (Mrs.) P. Soni **Ecology & Environment**												13-17
21. Environmental problems & Bioremediation	Dr. A.K. Tripathi **Ecology & Environment**											22-26	
22. Value addition, Cultivation and Marketing of Medicinal Plants	Dr. A.K. Sharma **NWFP**												6-10

Low-Cost Training Courses For Field Staff, Farmers & Artisans

The following Low-cost short term training courses for State Government and NGOs sponsored field staff, farmers, artisans, JFM/VFP committees, SHG members, etc. shall be conducted at Shatabdi Van Vigyan Kendra, City Campus of FRI during 2010. These courses are designed as per the requirements of the sponsoring agencies.

1. Nursery & Plantation Techniques

Course Director	:	Ms. Anita Tomar, Silviculture Division
Dates	:	5th July to 9th July, 2010.
Course contents	:	Seed Collection & Storage, Seed Testing & Dormancy, Visit to Seed Testing Lab, Nursery lay out & design, Nursery operations, Use of polyhouses, Mist chambers and hardening chambers for nursery, Container systems in nursery,, Nursery diseases, Insects-pests & their control, Vegetative propagation techniques, Soil working and planting techniques for different sites, Visit to seed processing unit & Central Nursery, Field visit to nursery & plantation.

2. Low-cost clonal/ propagation

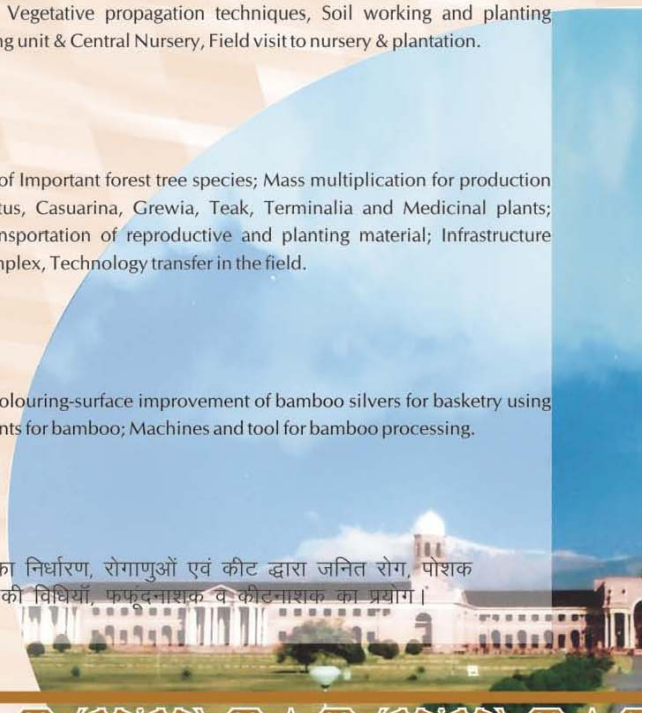
Course Director	:	Dr. Meena Bakshi, Botany Division
Dates	:	15th to 19th November 2010.
Course contents	:	Infrastructure development for clonal propagation of Important forest tree species; Mass multiplication for production of superior planting stock of Shisham, Eucalyptus, Casuarina, Grewia, Teak, Terminalia and Medicinal plants; Maintenance of clonal material in nursery; Transportation of reproductive and planting material; Infrastructure development and maintenance of propagation complex, Technology transfer in the field.

3. Bamboo Utilization

Course Director	:	Dr. Sadhna Tripathi, Forest Products Division
Dates	:	8th to 12th November 2010
Course contents	:	Seasoning, Preservation techniques of Bamboo, Colouring-surface improvement of bamboo silvers for basketry using ammonia fumigation and bark extracts; Fixtures joints for bamboo; Machines and tool for bamboo processing.

4. औशधीय पौधशाला व खेतों में स्वस्थ पौध का उत्पादन

कोर्स डायरेक्टर	:	श्री सुरेश शर्मा, वन रोग प्रभाग
दिनांक:	:	सितम्बर 14–16, 2010
विशय	:	अस्वस्थ पौध की पहचान, रोग कारक जीव का निर्धारण, रोगाणुओं एवं कीट द्वारा जनित रोग, पोशक तत्वों की कमी के संकेत, पौध के रखरखाव की विधियॉं, फफूंदनाशक व कीटनाशक का प्रयोग।



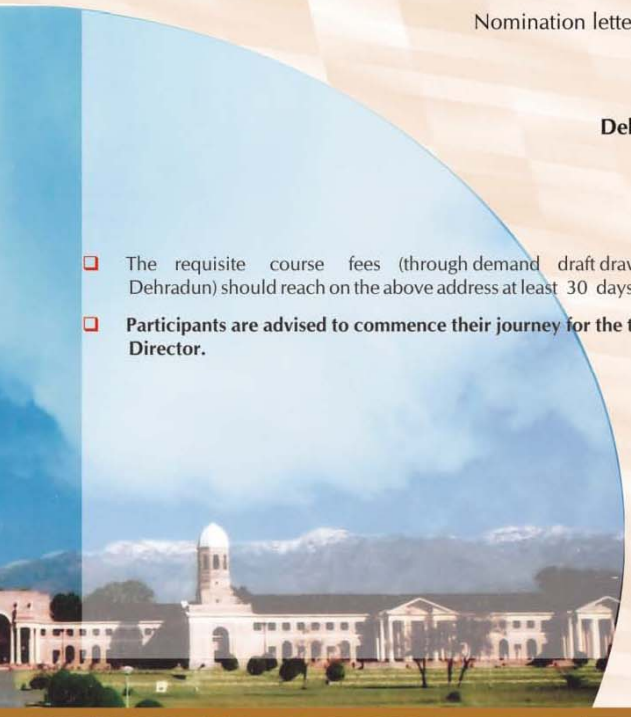
Course fees

- The course fees for STTC (including boarding & lodging charges) per participant is as follows:
- Rs. 10, 000 for Indian nationals,Rs. 20, 000 for SAARC countries, and Rs. 35, 000 for other foreign nationals.
- The course fee for Hi-Tech Nursery & Plantation Management at Sl. No. 1 (10 days) is Rs. 10,000.
- The course fee for "Identification of Timber through Field & Lab Orientation" at Sl. No. 10 is Rs. 15,000 (excluding boarding & lodging) and this course is for in-service government officers only.
- Course fee for "Low-cost short term training courses for farmers, artisans, etc. is Rs. 3,000 with a minimum of 10 participants for a training course.

NOMINATIONS

Nomination letters for the above courses may be addressed to:

Head, Extension Division
Forest Research Institute
P.O. New Forest,
Dehradun 248 006 (Uttarakhand)
Phone: 0135 - 2758606
Fax: 0135 - 2756865
E-mail: headext@icfre.org



- The requisite course fees (through demand draft drawn in favour of the **Accounts Officer, Forest Research Institute, Dehradun,** and payable at Dehradun) should reach on the above address at least 30 days before the commencement of the respective courses.
- **Participants are advised to commence their journey for the training only after getting confirmation about the course programme from the concerned Course Director.**

Website : www.icfre.org

Awareness Programme Conducted by FRI

Field visit of FRI Team

Tissue culture of *Swertia chirata*

Nursery of Jatrpha curcas

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