

# **CENTRE FOR FORESTRY RESEARCH AND HUMAN RESOURCE DEVELOPMENT, CHHINDWARA**

## **ANNUAL REPORT FOR 2008-2009**

### **Institute-At a Glance**

Centre for Forestry Research & Human Resource Development, Chhindwara came into existence on 30<sup>th</sup> March 1995. But from 3<sup>rd</sup> January 1996 it has been declared as Satellite Centre of Tropical Forest Research Institute, Jabalpur under the Indian Council of Forestry Research & Education, Dehradun. The mandate of the centre is to take up the forestry research in the specialized areas like biodiversity conservation, non-wood forest products, silviculture and tree improvement. In addition to this the centre has also been assigned to develop the human resource in forestry sector by imparting vocational training leading to poverty alleviation through self employment.

### **Objectives of the centre**

- To develop systems for sustainable forest management.
- To increase forest productivity through scientific forest management based on sound principles of ecology and genetics.
- To improve utilization of forest produce.
- To develop human resource through training in diversified aspects of forestry.

### **Significant achievements**

**PROJECTS COMPLETED DURING 2008-2009 : Nil**

**PROJECTS CONTINUED DURING 2008-2009**

**Project I: Standardization of nursery technology and evaluation of various planting stocks of *Pterocarpus marsupium* (Project ID No. 109/CFRHRD/2006-2(9)).**

**Status:** Seeds of *Pterocarpus marsupium* were collected from healthy trees from Gondia ( Maharashtra) region and experiments were carried out in the nursery to study the effect of different seed treatments on germination of seeds and its growth in the nursery. The seeds treated with cold water for 24 hours showed promising results as compared to hot water treatment. The studies conducted on effect of seed size on germination and germination energy showed higher significant differences. The bigger size seeds gave higher germination percentage and germination value as compared to the small size seeds. The studies on time of seed sowing in the beds showed higher germination percentage in the month of July and

minimum in the month of January. Experiments to standardize the potting media and size of root trainers was carried out by using different size of root trainers. Potting mixture in the ratio of 80% organic compost + 20% soil was found to be best combination where as the 250cc size gave better results with respect to root and shoot biomass. Experiments to study effect of different dosages i.e. 2,4 and 6 gm. of inorganic fertilizers on growth and development of 4 months old seedlings has been conducted. Urea, Di ammonium Phosphate and Murate of Potash per plant was applied but initially no effect of inorganic fertilizers on growth and development of seedlings was observed. The same experiments has been repeated for confirmation. Collected branch cutting from matured tree of *Pterocarpus marsupium* ( *Bijasal*) in the month of Feb. and March and experiment was laid out in mist chamber by treating the cuttings with different concentration of IBA 500,1000,1500 and 2000 ppm for 24 hours. Shoot formation was recorded after 14 days but no root formation was observed. In another experiment, root shoot cuttings of *Pterocarpus marsupium* (bijasal) was placed in the mist chamber by treating with different concentration of IBA 100,200,300 and 400 ppm for 24 hours and 62%,76%,84% & 96% healthy plants were recorded respectively. A field trial of different types of seedlings ( seedlings raised in polybags, root-trainers & root-shoot cuttings) has been established at CFRHRD Campus with three replications and spacing of 5x5 meter in randomized block design for evaluating the planting stocks of *Pterocarpus marsupium*. Causality replacement has been done. Data of height and collar diameter were recorded and field trial is being maintained.

## **Project II: Studies on the seasonal variation in active chemical constituents of Hadjor, *Cissus quadrangularis* Linn. [108/CFRHRD/2006-1(8)]**

**Status:** *Cissus quadrangularis* (Hadjor) plant samples were collected from following places depending on the availability viz. Chhindwara, Bhopal, TFRI, Jabalpur (Madhya Pradesh), Nagarjuna Botanical Garden, Akola, Nagpur (Maharashtra), Janjgir, Raigarh (Chhattisgarh) and National Research Centre for Agroforestry (NRCAF) Jhansi and planted in the nursery beds of the centre. Established *Cissus quadrangularis* nursery beds are being maintained by weeding, watering etc. *Cissus quadrangularis* fresh stem samples were collected on monthly basis from medicinal and aromatic plants (MAPs) nursery of the centre for estimation of active chemical constituents viz. total phytosterols, ascorbic acid, macroelements and trace elements content. Method was standardized for estimation of total phytosterol content. The samples were analyzed from January 2007 to March 2009. Ascorbic acid (Vitamin – C) content were analysed in the samples from November 2006 to March 2009. Macroelements viz. calcium, magnesium, potassium were analyzed from July 2006 to March 2009. Trace elements viz. zinc, copper, manganese, iron and selenium content were estimated. Analysis of active constituents viz. total phytosterols and ascorbic acid in *Cissus quadrangularis* fresh stem samples collected from Bhopal, Jabalpur, Chhindwara(M.P.), Janjgir, Raigarh (Chhattisgarh), Akola and Nagpur (M.S.) and Jhansi were also analysed simultaneously. Survey was conducted in some places of Chhattisgarh and Madhya Pradesh viz. Rajnandgaon, Khairagarh, Kapsi, Tamia and Betul District for collecting information from the tribals and traditional herbal healers regarding their knowledge on best harvesting time of *C. quadrangularis*. Further data compilation work is under progress.

**Project III: Standardization of cultivation protocol for *Asparagus racemosus* (Satawar) [No.119/CFRHRD/2007-2(12)]**

**Status:** After conducting literature survey on *Asparagus racemosus*(Satawar), site selection has been done. Site of open land has been selected at TFRI, Jabalpur campus and near CFRHRD, Poama. Preparation of nursery bed was done and seeds were sown in nursery beds at 1.5 x1.5 cm spacing. Farm yard manure and compost was applied. 70% germination response was observed at the depth of 1to 2 inches. Experiment was laid out to study the effect of different spacing viz. 45x45 cm, 60x45 cm, 60x60 cm and 45 x 30 cm and harvesting age of *Asparagus racemosus* on farmers field at Jabalpur, Poama and Chhindwara. The experiment was also laid out to study the effect of above spacings in combination with different types of organic fertilizers (F.Y.M., Vermicompost and VAM) with three replication in a randomized block design at CFRHRD nursery. The experiment was also laid out to study the effect of irrigation on growth of *Asparagus racemosus*. Half of the experimental plot was irrigated at 5 days interval and other half was left under stress condition. The tuber of stress condition crop is slightly bigger than the irrigated one. Soil testing of CFR & HRD nursery, Chhindwara and farmers field was done. 5% mortality of *Asparagus racemosus* plants was observed in farmer's field. Maintenance of experimental plots is being done. Samples of tubers have been taken for records. Seed collection from CFR & HRD nursery has been done to raise nursery for laying out other experiment in June. Chemical analysis of *Asparagus racemosus*(Satawar) tubers was done for saponin component at an interval of 45 days for 4 sites.

**Project IV: Genetic improvement of *Buchnania lanzan*. [No.116/CFRHRD/2007-1(11)]**

**Status:** Extensive survey has been conducted at Amarwada and Delakhari block of Chhindwara Forest division and selected 13 phenotypically superior candidate plus trees. Also 12 phenotypically superior candidate plus trees of *B. lanzan* were selected from Gondia and Shahada forest division of Maharashtra and 8 candidate plus trees from Raigarh Forest division of Chhattisgarh. Seeds have been collected from 25 candidate plus trees of *B. lanzan*.

Collected seeds were dried in the shade. After drying seeds were placed in polybags for germination. Germination percentage and growth data (height and collar diameter) has been recorded. 41-97 percentage germination was recorded. Progeny trial of *B. lanzan* has been established in the Centre for Forestry Research and Human Development campus by planting 25 progenies. 9 trees / family / replication with three replications in a randomized block design has been laid out. Progeny trial is being maintained. Data has been recorded on height and collar diameter of *B. Lanzan*.

## **NEW PROJECTS INITIATED DURING 2008-2009**

**Nil**

## **PROJECTS COMPLETED DURING 2008-2009**

**Nil**

## **PROJECTS CONTINUED DURING 2008-2009**

### **(Externally Aided)**

**Project I: Field trial on agro forestry model in farmers field with medicinal trees and herbs in Satpura plateau of Madhya Pradesh.[Pr.ID no-110/CFRHRD/2006-3(NMPB)(10)]**

**Status:-** During entire year from time to time monitoring work of all the twelve farmers field has been carried out in which all the details of protection and monitoring has been suggested. In the different training programmes conducted by our centre, the farmers were invited and trained. For casualty replacement sufficient number of plants of different selected species under the project has been distributed. They have been motivated by giving directions of NMPB time to time.

## **NEW PROJECTS INITIATED DURING 2008-2009**

### **(Externally Aided)**

**Project I: Developing methodology and parameters for selection of CPTs of NTFP species [Pr. ID No. 128/CFRHRD/2008-(MSFD)(13)]**

**Status:-** For selection of site of targeted species tour has been conducted to Gondia Forest Division, Chandrapur Forest Division and Nagpur Forest Division, Under Gondia FD site for *Terminalia chebula* has been selected in Jambhdi Forest Range. Also selected site for *Acacia catechu* in compartment no. 504. Under Chandrapur FD site for *Pongamia pinnata* has been selected in Chinchpalli Forest Range. Survey has been carried out in Palasgaon forest range. Under Nagpur FD site has been selected for *Acacia catecheu* in Khapa Forest Range. Survey has been conducted in Chhindwara FD and selected site for *Terminalia chebula* in Chhindi Forest Range. Survey has also been conducted in Batka Forest Range. Selection of site of targeted species has been carried out after extensive survey in Paratwada and Jarida forest range of Amravati forest division Maharashtra and selected site of *Terminalia chebula*, *Terminalia belerica* and *Pongamia pinnata*. Data recorded on important characters. Survey in Sawalmend and Chicholi Forest range in Betul Forest division of M.P. and Mandla Forest Division has been carried out and selected site for *Terminalia chebula*, *Terminalia Belerica* and *Pongamia pinnata*.

**STATEWISE PROJECT ALLOCATION (Under Instiutes  
jurisdiction)**

Name of State	No. of projects completed in 2008-2009	No. of ongoing projects in 2008-2009	No. of projects initiated in 2008-2009
M.P.	Nil	5	1
Maharashtra	Nil	0	1
Chhattisgarh		0	0
Orissa		0	0

**Abstract : Number of Projects**

	No. of projects completed in 2008-2009	No. of ongoing projects in 2008-2009	No. of projects initiated in 2008-2009
Plan Projects	Nil	04	Nil
External Projects	Nil	01	02
<b>Total</b>	Nil	05	02

**TECHNOLOGY ASSESSED AND TRANSFERRED**

NIL

**EDUCATION AND TRAINING**

- 1) Shri Suneesh Buxy attended training on “Advance Forestry Course” of three weeks from 8.9.08 to 26.9.08 at Indira Gandhi National Forestry Academy, Dehradun
- 2) Dr. Vishakha Kumbhare attended training on “ Basic Forestry” from 15.12.08 to 23.01.09 at SFS College , Dehradun.
- 3) Centre has organized and conducted 14 training programmes during the financial year 2008-09. 560 trainees participated in various training programmes. The target groups were SFD’s, Villagers, Farmers, NGO’s and herbal healers.

**LINKAGES AND COLLABORATION**

Linkages were developed with State Forest Departments, Forest Development Corporation, Agriculture Research Station, Chhindwara for conducting research / training and Forest Survey of India, Nagpur for analysis of forest floor and soil samples.

## **PUBLICATIONS**

1. Dr. Vishakha Kumbhare and Dr. P.B. Meshram (2007). Role of medicinal plants in management of insects In: Eco-friendly Pest Management. Shivneri Publishers and Distributors, Amravati (M.S.), India.
2. Vishakha Kumbhare (2007). Effect of processing on the anti-nutritional constituents in central Indian Bamboo shoots. In: Proceedings of National Seminar on State of Art in Cultivation, Collection, Storage, Processing & Marketing of Herbal, Medicinal and Aromatic Plants.
3. Vishakha Kumbhare (2008). Studies on the vitamin content of bamboo seeds. *Indian Forester* 134(9).
4. Vishakha Kumbhare (2008). HPLC estimation of phenolic acids in some central Indian bamboo shoots. In: Proceeding of National Seminar on Forest, Medicinal Plants & People.

**CONSULTANCY** - Nil

**PATENTS OBTAINED/FILED** - Nil

**Commercialisation of technology** - Nil

## **CONFERENCE / MEETINGS / WORKSHOPS / SYMPOSIA / EXHIBITIONS**

1. Shri S. Buxy attended workshop on Ayurvedic medical practitioner at Parasia on 11.06.2008 and delivered lecture on 'Cultivation of medicinal plants'.
2. Shri S. Buxy, attended workshop Planet Earth-Our Home Explore, Share and Care organized by Science Centre, Bhopal (M.P.) on 01.11.08
3. Shri Suneesh Buxy, delivered lecture on Global warming and need of afforestation at P.T. Education, Chhindwara on 21.12.08.
4. Dr. Vishakha Kumbhare attended National Seminar on Working Women & Job Satisfaction and contributed a paper entitled Career as Women Scientist-A Road for the future held at Rajmata Sindhiya Govt. Girls College, Chhindwara on 27.02.09.
5. Dr. Vishakha Kumbhare attended National Seminar on Biodiversity-Need of Conservation & Measures for Public Awareness and presented a research paper on Ethnobotanical uses of Hadjor, *Cissus quadrangularis* on 29.3.09 at Govt. P.G. College, Chhindwara.

## **Awards**

Shri Harishankar Awasthi, Forester of the Centre was awarded District level Award on 26<sup>th</sup> Jan. 2009 for his contribution in Cultivation, Conservation & Uses of Valuable Medicinal plants by district administration.

## **Distinguished visitors**

1. Shri Anil Srivastava, Commissioner, Jabalpur Division visited the Centre on 11.04.2008.
2. Shri Ajay Verma, State Co-Ordinator of World Wide Fund visited the centre on 7.5.2008.
3. Shri R.N.Saxena, Additional PCCF of Madhya Pradesh, visited the centre on 16.06.08.
4. Shri N. Shrivastava, Collector Chhindwara District visited the centre on 14.07.08.

## **Miscellaneous :**

1. Environment day was celebrated by organizing panel discussion of environmentalist, forest officers and staff of CFRHRD on 5 .6.08.
2. Plantation programme was conducted in the campus of CFRHRD, Chhindwara on 14.07.08.
3. Wild Life Week was celebrated by State Forest Dept, Chhindwara from 1.10.08 to 7.10.08 & Nature Awareness camp was conducted under Wild Life Week for school children on 4<sup>th</sup> - 5<sup>th</sup> Oct. 2008 at CFRHRD, Chhindwara.

**NAMES AND ADDRESSES OF PUBLIC INFORMATION OFFICERS AND APPELLATE AUTHORITIES UNDER THE RIGHT TO INFORMATION ACT 2005 IN ICFRE AND ITS INSTITUTES**

<b>Headquarters/ Institutes</b>	<b>Appellate Authorities</b>	<b>Public Information Officers</b>	<b>Subject matter(s)allocated</b>
Tropical Forest Research Institute, Jabalpur.	Dr. A. K. Mandal Director, TFRI, Jabalpur	Dr. K. C. Joshi Scientist-G and Public Information Officer, TFRI, Jabalpur	As per provision and guidelines provided under RTI Act, 2005





Training on “Agro-forestry and Cultivation of Medicinal Plants” for farmers on 11.08.2008.



Training on “Soil Conservation & Watershed Management” was organised on 2-3-2009 at CFRHRD, Chhindwara.