

Himalayan Forest Research Institute Shimla

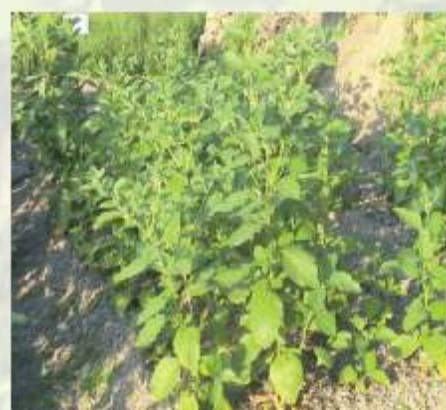
Himalayan Forest Research Institute (HFRI), Shimla, Himachal Pradesh was earlier, established as High Level Conifer Regeneration Research Centre during May 1977 for carrying out research on the problems associated with natural regeneration of Silver Fir and Spruce. The centre developed the technology for the same and transferred it to the State Forest Departments. During reorganization of forestry research and coming up of Indian Council of Forestry Research and Education (ICFRE), Dehradun in 1987, the mandate of this centre was enlarged from Regeneration of Silver Fir and Spruce to Eco-Rehabilitation of Cold Deserts, Mined Areas Rehabilitation, insect-pests and disease management, besides studies on agroforestry practices in hills and Regeneration of Coniferous and Broad-leaved Forests. This Centre was re-designated as Himalayan Forest Research Institute, Shimla in 1998. The Institute caters to the forestry research needs of the States of Himachal Pradesh and Jammu and Kashmir.

The Institute has been declared as an Advanced Centre for Cold Desert Afforestation and Pasture Management by the Council for taking up advanced research in eco-restoration of these harsh sites. Research Station located at Tabo (Lahaul-Spiti) mainly caters to the specific research needs of cold deserts alongwith the arid zone conditions.

PROJECTS COMPLETED DURING THE YEAR 2006-2007

Project 1: Promotion of medicinal plant cultivation among rural communities for sustainable income generation [HPFSR/GIF/2006-2007]

Findings: After undertaking field surveys and in consultation with the state forest department, four sites viz., Didag: 2003 m (Rajgarh), Kaalath: 1252 m (Shree Renuka Ji), Salani: 370 m (Nahan) and Johor: 360 m (Paonta) were selected for establishing the demonstration plots of medicinal plants. Twenty eight species of commercially important medicinal plants were raised and maintained in these demonstration plots for awareness and training purposes. In the project, eight trainings to popularize commercial cultivation of medicinal plants were organized where a total of 448 participants comprising of farmers, members of VFDCs, Mahila Mandals, NGOs and front line field staff of Forest Department of District Sirmour were trained. The course material for training was developed in simple Hindi language and was distributed to the trainees.



Performance of *Coleus amboinicus* and *Withania somnifera* in demonstration plots

Project 2: Standardization of nursery technology for mass propagation of selected medicinal plant species [HFRI-009/07(NWFP-01)/PLAN/2000-2007]

Findings: Germplasm of 33 species of medicinal plants of temperate Himalayas in Brundhar nursery (Manali), 30 species at Shilly nursery (Solan) and 10 species each at Shillaru Nursery (Shimla) and Model Nursery (Shimla) were maintained for research, training and demonstration purposes. Nursery trials were conducted for improving the agro-techniques of economically important medicinal plant species e.g. *Picrorhiza kurrooa* (Karu), *Aconitum heterophyllum* (Patish), *Valeriana jatamansi* (Mushkbala), *Angelica glauca* (Chora) etc. Nursery techniques were improved for the mass production of nursery stock of these four species viz. *Picrorhiza kurrooa*, *Valeriana jatamansi*, *Aconitum heterophyllum* and *Angelica glauca*. In case of *Aconitum heterophyllum* and *Angelica glauca* techniques for propagation through seeds were improved. Scientific shade requirements were standardized for the production of nursery stock of these species.

Project 3: Standardization of nursery techniques of raising containerized seedlings of conifers and their broadleaved associates [HFRI-016/05 (SFG-06)/PLAN/2000-2007]

Findings: Trials were conducted to find out the optimum size/type of root-trainers for nursery production of *Cedrus deodara*, *Picea smithiana* and *Abies pindrow*. The result thus obtained, revealed that the growth performance of all these three conifer species was found to be the best when raised in single cell root trainers. Similarly, for *Alnus nitida* and *Grewia optiva* nursery stock was found to be best when raised in different sized root-trainers. Research was also carried out on plug+2 in Spruce (*Picea smithiana*) and plug+3 experiments in Silver Fir (*Abies pindrow*) for raising nursery stock of these species first in containers and then as bare roots. Vegetative propagation trials of potential cold deserts species viz. *Elaeagnus umbellata*, *Colutea nepalensis* and *Rosa webbiana* were conducted.



Cedrus deodara in root trainers



Root trainer trial in *Grewia optiva*

PROJECTS CONTINUED DURING THE YEAR 2006-2007

Project 1: Introduction and performance trial of *Paulownia* species for agroforestry in different agro-climatic zones of Himachal Pradesh [HFRI-026/08 (AGF-02) PLAN/2003-2008]

Status: To mitigate the increasing demands of timber, fuel and fodder, systematic introduction trials of *Paulownia* species viz. *P. fortunei*, *P. fargessi*, *P. elongate* and *P. tomentosa* in different agro-climatic zones of Himachal Pradesh were established. Trial on inter-cropping of *Paulownia* spp. with tea is also maintained.



Raising of ETP's of
Paulownia
species in the nursery



Trial of *Paulownia* species
at Johroan, Poanta (H.P.)



Flowering in *Paulownia*

Project 2: Diagnostic survey and appraisal of existing agroforestry systems in mid and high hills of Himachal Pradesh [HFRI-028/08 (AGF-03) PLAN/ 2003-2008]

Status: After extensive diagnostic surveys, the existing agro-forestry systems in mid and high hill temperate regions of Kullu district of Himachal Pradesh were identified. Based on the size of operational land holdings, farmers were divided into four categories viz. marginal, small, medium and large. Socio-economic studies in different categories of farmers were carried out for structure of the family, education status of the head of family, land use statistics, status of the government employment and livestock status. Survey was conducted using Semi Structured Interviews (SSI) with the farmers and data on biological yield and economic return of different existing agroforestry systems are being collected.



Brassica rapa with Apple

Project 3: Standardization of nursery techniques of five dominant indigenous species (*Capparis spinosa*, *Colutea nepalensis*, *Caragana gerardiana*, *Ribes orientale*, *Crataegus songarica*) besides *Eleaegnus angustifoli*, *Hippophae rhamnoides* and *Rosa webbiana* of cold deserts [HFRI-019/03(EBC-08) PLAN/ 2002-2009]

Status: Trials to understand the (i) Effect of different concentrations of Indole-3 Butyric Acid on rooting in shoot cuttings of *Ribes orientale*, *Colutea nepalensis*, *Eleaegnus angustifolia*, *Hippophae rhamnoides* and in root suckers of *Rosa webbiana* and *Capparis spinosa*, (ii) Effect of pre-sowing (hot-water and Gibberellic Acid) treatment on germination behaviour in the seeds of *Ribes orientale*, *Colutea nepalensis*, *Hippophae rhamnoides*, *Capparis spinosa* and *Rosa webbiana* and (iii) Effect of medium (various ratios of sand and soil) on germination behaviour in the seeds of *Ribes orientale*, *Colutea nepalensis*, *Hippophae rhamnoides*, *Capparis spinosa* and *Rosa webbiana* were repeated, both in poly house and in nursery conditions. Besides this, experiments on the effect of mulching treatments on



Ribes orientale, *Hippophae rhamnoides*, *Rosa webbiana* and *Capparis spinosa* were undertaken.

Detailed ecological studies for the identified species were carried out in the already selected sites at Mane, Ladang, Kurith, Hurling, Tabo and at Samdoh falling in Spiti Valley of Himachal Pradesh. Data on various nursery trials revealed that hot water treatment for 24 hours in case of seeds of *Hippophae rhamnoides* gave maximum germination per cent.

It was seen that the experiments as laid out inside the poly tunnels are performing well over the plants than those growing in the open nursery. Field trials to assess the performance of *Eleagnus angustifolia*, *Hippophae rhamnoides*, *Rosa webbiana* and *Colutea nepalensis* were established.

Nursery trials to assess the performance of seed germination in *Rosa webbiana*, *Capparis spinosa*, *Caragana gerardiana* and *Ribes orientale* were laid in under ground polyhouse, shade house and poly tunnels conditions. Besides this, effect of different concentration of IBA on rooting in *Eleagnus angustifolia*, *Ribes orientale* and *Crateagus songarica* were also laid out in poly tunnels. Also, an experiment to assess the effect of different diameter classes of roots on rooting and growth in *Rosa webbiana* was initiated during the period.

Project 4: Studies on plant diversity in cold deserts of district Kinnaur, Himachal Pradesh [HFRI-029/02(EBC-11)PLAN/2004-2007]

Status: Carried out phytosociological studies at an altitude, varying from 3000-5000 m above msl, in Labrang valley of Pooh sub-division of Kinnaur district of Himachal Pradesh.

Analysed the vegetation data collected from Labrang valley (3000-5000 m) of Pooh sub-division of Kinnaur district. Out of 75 medicinal plant species recorded from the area, 16 species i.e. *Aconitum heterophyllum*, *Bergenia stracheyi*, *Betula utilis*, *Corydalis govaniana*, *Dactylorhiza hatagirea*, *Heracleum candicans*, *Hyoscyamus niger*, *Hyssopus officinalis*, *Juniperus communis*, *Juniperus macropoda*, *Lactuca macrorhiza*, *Pleurospermum brunonis*, *Rheum webbianum*, *Rhodiola heterodonta*, *Selinum tenuifolium* and *Thymus linearis* fall under the category of threatened plants.

Project 5: Natural enemy complex of key and potential pests of five *Quercus* spp. of Himachal Pradesh [HFRI-027/06 (FPT-05) PLAN/2003-2008]

Status: Studies on the Life cycle of 'Indian Gypsy Moth' (IGM) was repeated and detailed morphometric study was conducted on the immature stages of the moth. Nuclear Polyhedrosis Virus (NPV) was extracted from the infected larvae of the IGM, purified and studied under TEM. Pupal parasitoid *Exorista rosica* was reported and as many as 21 species of predatory spiders were found among natural enemies.

The immature larvae of IGM collected from the oak forest were reared on natural diet (oak leaf) in the laboratory and adults thus emerged were allowed to mate in a mating chamber to study the life cycle.

NPV Study: The caterpillars reared in the laboratory were innoculated with viral suspension already purified from last year's infected larvae. The oak leaves were contaminated with viral suspension and the caterpillars were allowed to consume the leaves. Structural details of the virus were studied under Transmission Electron Microscope (TEM).

Parasitoids and Predators: *Exorista rosica*, a pupal parasitoid of the family Tachinidae was found to be the most effective in controlling the population of IGM.

**Project 6: Survey, biology and control of insect-pests of important medicinal plants in Himachal Pradesh and Jammu and Kashmir [HFRI-033/06(FPT-07)PLAN/2005-2010]**

Status: In total 32 insect species were recorded from 13 selected medicinal plants, being cultivated in this region. The status of these insects on the basis of damage caused and their abundance has been assessed and found that *Plusia orichalcea* Fab., is the most destructive pest. The biology of *P. orichalcea* on *Saussurea costus* was completed in the laboratory.

Different development stages of *P. orichalcea* and their morphological characteristic have also been studied in the laboratory. First time, mite infestation was recorded on *Valeriana jatamansi* Jones; in Himachal Pradesh and the infestation ranged from 30-80 per cent in nursery. The species of mites were identified as *Panonychus ulmi* (Koch), European Red Mites and *Tetranychus urticae* (Koch), Spider Mite and they are otherwise supposed to be the destructive pests of Apple.

Project 7: Diagnostic study of indigenous and institutionalized participatory forest management in Himachal Pradesh [HFRI-025/08 (PFM-01) PLAN/ 2005-2008]

Status: Survey of various village forest development committees and panchayats were carried out in Nahan, Rampur, Mandi and Dharmashala circles. Staff interviews were also carried out.



Moth of *Plusia orichalcea* pest of Kuth

Project 8: Planting stock improvement programme in *Cedrus deodara* [HFRI-028/05(SFG-08) PLAN-03/2003-2008]

Status: Based on the survey carried out to select best seed stands of deodar in the states of Himachal Pradesh and Jammu and Kashmir, selection of the seed stands was done on the basis of sample plot studies. These sample plot studies were carried out to supplement ocular selection of seed stands for their conversion into Seed Production Areas (SPAs). The two seed stands i.e., Cheog Forest (20 ha) of Theog Forest Division and Nankhali Forest (15 ha) of Rampur Forest Division were finally selected for complete enumeration.

The seed stand identified in Neeru range of Bhadrawah Forest Division in the state of Jammu and Kashmir in collaboration with State Forest Research Institute, Jammu were prepared and are in the process of submission to the authorities concerned. Cones were also collected from 52 Plus Trees identified in different forest areas and progeny trial raised in the nursery.

Project 9: Allozyme variation in natural populations of deodar (*Cedrus deodara*) [HFRI-030/05(SFG-10) PLAN-03/2005-2008]

Status: The genetic diversity and differentiation using isozyme techniques in different populations (15) of deodar are being studied by assaying five enzyme systems namely SKDH, MNR, IDH, GDH and MDH. Seven populations, six from the state of Himachal Pradesh and one from Jammu and Kashmir were electrophoresed for these enzyme systems.

Shikimic Acid Dehydrogenase (SKDH): One zone of activity with three single banded phenotypes was identified both for endosperm and embryos.

Malate Dehydrogenase (MDH): Gels stained for MDH showed four zones of activity. The system has been studied for three populations and would be studied for remaining populations this year.



During the year efforts were also made to score more enzyme systems and in this endeavour standardized the staining protocols for two more systems i.e., MDH and 6PGDH. These enzyme systems are now being assayed for the populations being studied for genetic diversity and differentiation in the species.

NEW PROJECTS INITIATED DURING THE YEAR 2006-2007

Project 1: Standardization of methodology for seed collection, seed handling, storage and breaking seed dormancy in *Juniperus polycarpos* C. Koch and *Fraxinus xanthoxyloides* (Wall. ex G. Don) DC. [HFRI-036/03 (SFG-11) PLAN-2006-2011]

Status: Field visits to upper tribal areas of Kinnaur District were carried out and sites having seed bearing trees of *Fraxinus xanthoxyloides* were selected at Thopan (Akpa), Kirankhud, Spillow, Labrang and of *Juniperus polycarpos* at Labrang Kanda and Ropa Kanda. The processed seeds were put in to different pre-sowing treatments i.e., stratification in moist sand for different time periods and germination studies initiated. Moisture content of seeds was recorded in the laboratory. Seed storage trials were initiated by using different storage containers and environmental conditions.



Juniperus polycarpos seeds



Fraxinus xanthoxyloides seeds

Project 2: An ecological assessment of floristic diversity in Hemis High Altitude National Park, Ladakh, Jammu and Kashmir [HFRI-031/02 (EBC-12) PLAN/2006-2011]

Status: Developed liaison with the office of Chief Wildlife Warden and concerned officers. With the help of the wildlife office staff prepared outline maps and then marked trails to follow within the park area, in order to cover the major regions of the park for obtaining a true representative diversity of the area. Conducted surveys and ecological studies, starting from Marshelang to Hemis region.

Documented the vegetation types in the river valleys. Soil samples were collected for analysis. Ethno botanical records were initiated, along with the information obtained from local *Amchi* (traditional healer).

Project 3: Management of insect borer complex in chirpine forests [HFRI-035/ 06(FPT-08)2006-2011]

Status: Two forest sites viz. D- 113, Sairighat Forest (Solan Forest Division) and P-8 Santana Forest (Hamirpur Forest Division) were selected for observations/ experimentation and basic data on the status of tree health were recorded. Three plots of size 1000 sq m were marked in these sites and insect

fauna of Chirpine and their natural enemies were recorded from randomly selected trees. An experiment to study the efficacy of insecticides (Grownim and Edosulphan 35 EC) to control the insect stem borers in Sairighat has also been laid.

Project 4: Evaluation of soil fertility status and nutrient return from the important indigenous agroforestry systems in Himachal Pradesh [HFRI-034/08(AGF-04)/PLAN/2006-2011]

Status: Field surveys were undertaken for selection of important agroforestry systems in Shimla, Hamirpur, Bilaspur and Mandi districts of Himachal Pradesh. Soil samples were collected and analyzed for soil fertility status in important agroforestry systems. Laying of experimental trials for evaluation of nutrient returns from important agroforestry species are in progress.



Some important Agro-forestry systems in Himachal Pradesh

PROJECTS CONTINUED DURING THE YEAR 2006-2007 (Externally Aided)

Project 1: Development of suitable model for inter-cropping of commercially important medicinal plants with horticultural plantations in temperate region of Himachal Pradesh [BT/PR4372/PBD/17/285/2003]

Status: Maintained different inter-cropping trials of selected medicinal plants viz. *Aconitum heterophyllum*, *Angelica glauca*, *Polganatum verticillatum*, *Picrorhiza kurrooa* and *Valeriana jatamansi* as intercropping with horticultural crops i.e. Apple and Cherry, orchards of these crops were established during 2004 and 2005 in high hill temperate region of both Shimla and Kullu District of Himachal Pradesh. Data were recorded for pre-harvest agronomic growth characteristics and porometer study of different intercropping trials. Utilizable parts of various medicinal plants harvested from different intercropping trial sites were studied for biomass and analyzed the cultivated samples for the change in level of active principles of medicinal plants under various models.

Project 2: Ecological and management studies in certain dry temperate and alpine pastures of Lahaul and Spiti, Himachal Pradesh [BT/PR/4102/ NBDB/51/ 027/2003/2004-2007]

Status: Sites supporting alpine pastures in each part of the district i.e. Miar Nallah, Triloknath, Dalang and Kwaring in Lahaul valley and Gue, Tabo and Kunjam in Spiti valley were re-surveyed for floristic

wealth. Detailed investigations on structural and functional aspects of the alpine pastures, including the assessment of floral elements at Khoksar (Lahaul Valley) and Kiyato and Gate (Spiti valley) were carried out.

Floristic Wealth in Alpine Pastures of Lahaul and Spiti Valleys



Primula reptens



Arnebia euchroma



Primula rosea



Pedicularis pectinata

Project 3: Development of ecologically viable and socio-economically acceptable integrated models for arresting willow (*Salix* spp.) mortality in Lahaul Valley of Himachal Pradesh [GBPI/IERP/04-05/34/861/2005-2008]

Status: Benchmark survey was conducted in detail in Tinan and Pattan valleys on site specific mortality, number of trees affected and other related ecological parameters were recorded. Propagating material of different species of *Salix* viz. *S. fragilis*; *S. vitellina*; *S. matsudhana*; *S. babylonica*; *S. alba* and *S. corrulea* from Jammu and Kashmir were collected. International clones (given by code names) viz. UWA-1; UWA-2; UWE-1; UWM-1; UWM-2; UWM-3; UWU-1; UWU-2; UWK; UWY-1; UWY-2; WO2-4 were also procured.

Established the nurseries at Sissu (Lahaul valley) and at Tabo (Spiti valley) where the above mentioned planting materials of Willow and Poplar were raised and maintained for further screening and production of planting stock for laying out the field trials. Also established demonstration plantations of willow and poplar in the forest lands over an area of 0.5 ha.

Two species of willow feeding aphids viz. *Tuberolachnus salignus* (Aphidoidea: Lachnidae): Giant Willow Aphid (GWA) and *Pterocomma salicis* (Aphidoidea: Lachnidae): Black Willow Aphid (BWA) were recorded.

The nursery stock was raised, demonstration plantations were established and maintained in the forest land at Sissu (Lahaul valley) during the period under report. Besides this 5000 planting stock of various provenances of *Salix* was also maintained at Tabo (Spiti valley).

Soil samples, as collected earlier, from the affected site were analyzed for physico-chemical properties in the laboratory.



Raising and Maintenance of Planting Stock of Willow

Project 4: Ecological assessment of forest areas falling under Kol Dam hydroelectric project in Bilaspur district of Himachal Pradesh [FT48-88/86(FCA) CATP Kol Dam Funding Agency: HPSFD]

Status: Selected the study sites in different catchment areas of Forest Division of Bilaspur, Suket, Kunihar, Shimla, Theog and Karsog. Detailed survey and ecological studies were carried out in catchment areas. Soil samples were also collected to know the chemical properties of the soil. Analysed the data collected from different catchment areas of Forest Division of Bilaspur, Kunihar, Theog and Karsog. Carried out phytosociological studies in Sunni and Hadaboi catchments of Shimla and Suket forest of Himachal Pradesh during the year 2006 and the vegetation data was analyzed altitude wise.

Project 5: Study on plant diversity in Rakchham, Chitkul Wildlife Sanctuary of district Kinnaur Himachal Pradesh [GBPI/IERP/04-05/15/862-Funding Agency: GBPI]

Status: Selected the study sites and carried out phytosociological studies at an altitude varying from 3000-3600 m in Doje Forest, Shone Khad and Kanasa Nala of Rakchham beat and 3300-4200 m in Hitch Pawang, Murti Panag area of Chitkul beat of the sanctuary. The data were analyzed to assess the diversity index.

Project 6: Screening of potential germplasm of *Hippophae rhamnoides* (Seabuckthorn) for raising quality planting stock in the nursery and establishment of demonstration plantations in cold desert areas of Spiti valley, Himachal Pradesh [DDP/Spiti/SBT/2006-11/2006-2009]



Status: Survey was undertaken throughout Spiti valley and performance of the populations growing in different locations was studied. Three major populations from Tabo, Shego and Mane were selected for collection of the planting material. During selection, variations within a population were also observed, recorded and planting stock was collected accordingly.

A demonstration plot over an area of 0.5 ha was established at Tabo Research Station. Besides this, nursery of SBT was also established where 15000 Nos of seedlings of the species are growing for their further multiplication and distribution for the people of the valley.

Project 7: Studies on population status and berberine content in different provenances of *Berberis aristata* DC. in Himachal Pradesh and standardization of its propagation techniques [BT/PR/4695/PBD/17/300/2005-2008- Funding Agency: DBT]

Status: To develop nursery techniques for mass propagation of identified elite clones/provenances of *B. aristata*, six provenances of *Berberis aristata* were identified in Himachal Pradesh. For seed germination studies, seeds collected from Sarahan provenance were subjected to different treatments.

During this year one provenance of *B. aristata* was identified in Mandi District. Extensive survey was conducted in Chamba district during August 2006; however *B. aristata* could not be located in the district. Seeds collected from Narkanda provenance were subjected to different treatments and the results revealed that seeds treated with sulphuric acid (2 minutes) have maximum seed germination.

Project 8: Inventorization, documentation of plant diversity and to evolve site-specific management strategies for conservation of various sacred groves in Kullu valley of Himachal Pradesh [GBPI/IERP/04-05/18/865/2005-2008]

Status: The study aims to inventorize and document the plant diversity, assess the regeneration status of trees in comparison to the adjacent forest area, create awareness among the local people and to develop site-specific strategies for the rejuvenation and conservation of sacred groves through participation of local people.

During the current period, data on floristic diversity, ethnobotanical information and existing management practices of 11 sacred groves were collected. Plant samples have been collected from all the sacred groves and herbarium specimens were prepared for all the collected species. Data on GBH and height of trees in seven sacred groves have been collected. Traditional ethnobotanical information on 51 plant species was documented by interviewing the local people. A pamphlet in local language is being prepared for creating awareness among the local community for conservation of sacred groves.



Deodar trees in the sacred grove at Soeel



A view of sacred grove at Prini

Project 9: Promotion of medicinal plant cultivation among rural communities for sustainable income generation

Status: Three demonstration plots were established and trainings (8 Numbers) to about five hundred farmers, NGOs, mahila mandal representatives, members of village forest development committees and front line staff of Himachal Forest department were provided. The demonstration plots have been handed over to the Forest department for maintenance and further utilization. Trainings were provided to farmers and other stake holders.

Project 10: Production of quality planting material of *Picrorhiza kurooa* and *Valeriana jatamansi* and extension of their cultivation technology to local communities [GO/HP-2/2004-2007: NMPB]

Status: Established demonstration nursery of medicinal plants at Brundhar, Jagat Sukh, Manali (H.P.). Shade House and Poly-house were designed and installed in the nursery. Vermi-composting activities have been successfully commissioned at that nursery. Irrigation facilities were strengthened and were proved very useful for mass production of nursery stock of temperate medicinal plants. The production and maintenance of quality planting material of *Picrorhiza kurrooa* (Kutki) and *Valeriana jatamansi* (Mushkbal) were carried out at three nurseries of the Institute viz., Brundhar medicinal plants nursery (Manali), Shilly nursery (Solan) and Shillaru nursery (Shimla).

The farmers have been sensitized through these open meetings and training programmes for adopting commercial cultivation of Kutki and Mushkbal in temperate areas. Two booklets as well as two pamphlets in Hindi were published for the benefit of local communities.



Training and Demonstration Programme for farmers at Gohar (Nahan Forest Division of Himachal Pradesh)

Project 11: Suitability of *Jatropha curcas* L. seed sources in lower and mid himalayan regions of Himachal Pradesh [BT/PR/5094/AGR/16/429/2005-2008- Funding Agency: DBT]

Status: Produced 46,000 quality planting material of *Jatropha curcas* of various seed sources collected mainly from Himachal Pradesh. Experimental-cum-demonstration plantations at different sites in Himachal Pradesh on 18 ha area has been carried out to find out suitability of this species/seed sources in lower and mid Himalayan regions of the state. About 110 Kg of seeds of *Jatropha curcas* was collected from various seed sources from the state of Himachal Pradesh during 2005 and 2006 for

research and production of quality nursery stock under this project. Seed sources located in Himachal Pradesh have been identified for oil content. Production of quality nursery stock of these seed sources is being done in the nursery for ultimately establishing demonstration plantations for future seed resource. Published a booklet in simple Hindi titled, "Jatropha: Bhavishye Ka Biodiesel Podha" for the benefit of end users.



Nursery stock production



Seedlings ready for out planting



Field plantation

Project 12: Development of elite planting material, establishment of model plantations and extension of nursery and plantation techniques of wild apricot to local communities in Himachal Pradesh [27-114/NOVOD/2006-2007: NOVOD]

Status: Seeds of wild apricot were collected from selected areas of Kinnaur and Shimla districts of Himachal Pradesh. Pre-seed stratification treatment during winter months was provided to wild apricot seeds before sowing in nursery beds. About 10,000 quality planting material of this species were produced in the nurseries of the institute. Demonstration plantations on 10 ha area in Mandi and Kullu districts of Himachal Pradesh were carried out. Also maintained demonstration plantation of wild apricot. Two training and demonstration programmes on 'Wild Apricot - Nursery, Plantation, Oil Production and Its Uses' were organized for local communities and field functionaries of Himachal Pradesh Forest Department.



Training Programmes organized for the Forest Officials on popularizing wild apricot cultivation



Project 13: Setting up 100 hectare demonstration plot in Himachal Pradesh and production of elite planting material of *Dendrocalamus hamiltonii* [BT/PR/5243/AGR/16/456/2005-2008 - Funding Agency: DBT]

Status: The demonstration plots of *Dendrocalamus hamiltonii* is being raised at Dhadiyarghat in Solan Forest Division. The plants are being produced by Institute of Himalayan Bioresource Technology (IHBT), Palampur. The technical details of experimental plot and demonstration plot have also been provided by the funding agency i.e., DBT. The total target of 20.72 ha has been achieved. The area raised is being managed and maintained properly.

PROJECTS INITIATED DURING THE YEAR 2006-2007 (Externally Aided)

Project 1: Production of quality planting material of *Aconitum heterophyllum* Wall. Ex Royle and *Angelica glauca* Edgew and extension of their cultivation technology to local communities [GO/HP-07/2006-2009: NMPB]

Status: About 1.60 lakhs quality nursery stock of *Aconitum heterophyllum* (Atish) and 6,000 nursery stock of *Angelica glauca* (Chora) have been produced. Out of that 30,000 *Aconitum heterophyllum* nursery stock was distributed to various end users, so far. A small polyhouse of size 10x4 m has been established at Shillaru nursery under this project for research, production and demonstration purposes. Rain water harvesting facilities were also created in this nursery under this project. Vermi-composting activities have been also successfully commissioned in the nursery. Organized one training and demonstration programme for the benefit of farmers. Two pamphlets in Hindi have been published for the benefit of local communities.



DG-ICFRE inspecting nursery stock of Atish



DG-ICFRE inspecting nursery stock of Atish

Abstract: No. of Projects

	No. of projects completed in 2006 2007	No. of ongoing projects in 2006 2007	No. of projects initiated in 2006 2007
Plan Projects	3	9	4
External Projects		13	1
Total	3	22	5



EDUCATION AND TRAINING

Education

1. Prof. S.L. Stephenson a world authority on Eumycetozoans from the University of Arkansas, United States of America, delivered a lecture on “Global Diversity of Eumycetozoans” on 25th May 2006 in the conference hall of the Institute.
2. Shri Frahad Vania-Advisor Change Management of HPFSR, Shimla delivered a lecture on “Impact Assessment of the Watershed Development Programme” in the conference hall of this Institute on 29th May 2006.
3. Twenty one SFS officer trainees from State Forest Service College, Dehradun visited Himalayan Forest Research Institute, Shimla on 12th June 2006 during their official trip to North India. They were apprised of the achievements and ongoing activities of HFRI through presentations. Discussion pertaining to forestry in general and forestry research in particular were also held with the officers and scientists of this Institute.
4. Dr. Oliver Springate, Bagniski, Advisor Implementation of Himachal Pradesh Forest Sector Reform Project visited the institute during August 2006 for necessary consultation and interactions with the director of the institute. Issues pertaining to sustainable forestry were discussed during the meeting.
5. Mrs. Vandana Thapliyal, Coordinator, WWF Shimla visited the institute on 22nd August 2006 alongwith 20 participants of the training titled “Training programme for local youth in guiding the tourists on eco-tourism” being organized by WWF. During their visit, the youth were exposed to scientific innovation in forestry research including the role that forests can play towards enhancement of eco-tourism.
6. A team comprising of 18 students of B.Sc. Forestry from Tamil Nadu Agriculture University, Forest College and Research Institute, Mettupalayam visited the institute on 8th September 2006 and interacted with the faculty of the institute on the issues pertaining to forestry in general and forestry research in particular.
7. Shri B.D. Suyal, Conservator of Forests (Policy and Law) on 21st September 2006, delivered a lecture on the Right to Information Act-2005 to the officers and staff of this institute. During the presentation, background behind the act, its history, evaluation and provisions were discussed in detail, which was followed by lot of discussion on the issue.
8. Ms. Reeta Kumari Sharma a trainee from Barkatullah University, Bhopal completed her dissertation work on “Isozyme Analysis in *Cedrus deodara*” under the supervision of Dr. Rajesh Sharma, Scientist-E of this institute.
9. Exposure visit of 50 farmers was organized on 20th December 2006 by this institute to Kalath nursery/ demonstration plots of medicinal plants of Jamta range of Renuka Forest Division.
10. Students of M.Sc. (Forestry) of Sher-e-Kashmir University of Agriculture, Science and Technology (SKUAST), Srinagar (Jammu and Kashmir) visited the institute on 21st February 2007. The students were apprised about the achievements and ongoing activities of HFRI through a presentation.
11. Ms. Sheetal Sandhu a student trainee from Kanya Gurukul Mahavidyalaya, Gurukul Kangri Vishwavidyalaya, Haridwar completed her dissertation work on “Eco-rehabilitation of lime



stone mined area and its impact on vegetation and soil status in Baldwa, district Sirmour" under the supervision of Dr. R.K. Verma, Scientist-D of this institute.

Training

1. A three days training programme on "Competence enhancement through auto suggestion and other exercises" from 2nd to 4th August 2006 was organized by the project director, Himachal Pradesh Forestry Sector Reform Project (HPFSRP), Himachal Pradesh State Forest Department, Tallend, Shimla in collaboration with Himalayan Forest Research Institute Shimla under Management Development Programme (MDP) in the conference hall of the institute. Shri Surinder Kumar, IFS, Director, HFRI, Shimla along with 15 officers and officials participated in the training programme.
2. Two training programmes of one day each were organized on "Cultivation of medicinal plants" and "Nursery and plantation technique" at Rampur on 13th and 14th September 2006. The trainings were externally aided under CAT Plan by Rampur Circle Forest Department.
3. Organized two training programmes at Nahan on 26th and 27th September 2006 on "Cultivation of medicinal plants" to farmers (50) and front line staff (50) of SFD of Nahan Forest Division.
4. Two days training and demonstration programme on "Commercial cultivation of Kutki and Mushkbala" was organized by the institute on 21st and 22nd November 2006 at Gohar Nachan Forest Division of Himachal Pradesh. The said training was conducted under NMPB funded project. 48 farmers including 50% women folk from Chachyot tehsil of Mandi District participated in the deliberations.
5. Two days training and demonstration programme on "Cultivation of medicinal plants" was organized by the institute on 20th and 21st December 2006 at Renuka, Himachal Pradesh. The said training was conducted under Good Idea Fund of Himachal Pradesh Forests Sector Reforms project. A total of about 50 farmers and 50 frontline field functionaries of Renuka Forest Division, district Sirmour participated in the programme.
6. Two days Trainers Training Programme on "Wild apricot nursery, plantation, Oil production and its uses" was organized by the institute on 27th and 28th December 2006 at Forest Training Centre, Sundernagar, District, Mandi, Himachal Pradesh. The said training was conducted under NOVOD Board funded project. About 50 frontline field functionaries of Himachal Pradesh State Forest Department participated in the programme.
7. Organized and imparted 3 trainings on "Cultivation of medicinal plants" to farmers and frontline staff of Rajgarh Forest Division and Nahan Forest Division of district Sirmour (H.P.) under Big Good Idea Fund (GIF) Project, on 6th, 7th and 9th February 2007.
8. Organized two days training-cum-demonstration programme on "Wild Apricot" at village Jari in Parvati valley of Kullu District on 12th and 13th March 2007 under NOVOD Board Funded Project. Training also covered other aspects like medicinal plants, composting, vermi-composting etc. and was attended by 67 farmers of the region.
9. Two training programmes of one day each were organized on "Cultivation of medicinal plants" for villagers and front line staff of SFD. 50 participants each of Renuka Forest Division at Renuka, attended the programmes held on 21st and 22nd December 2006.
10. Organized and imparted training on "Cultivation of medicinal plants" to the frontline staff of Jammu Forest Division at SFRI, Jammu on 21st and 22nd February 2007.



11. Imparted training on "Cultivation of medicinal and aromatic plants" sponsored by NGO named 'Organization for Ecology Conservation, Entrepreneurship, Education and Development' to the farmers at Karjain, Kullu on 27th and 28th January 2007.

LINKAGES AND COLLABORATION

National

1. Linkages were developed with IHBT, Palampur for carrying out active ingredient analysis of medicinal plants.
2. Linkages and collaboration were developed with NGO's and SFD's for organizing the various training programmes to different end users.
3. Collaboration has been initiated with CSK, Himachal Pradesh Krishi Vishvavidyalaya, Palampur for taxonomic studies. In addition, the institute/ universities in this region are contacted for exchange of ideas / informations.

PUBLICATION

Brochures/ Technical Bulletins/ Booklets/Pamphlets

1. Vijender P. Panwar, Jagdish Singh and K.D. Sharma (2007): 'Cultivation of Medicinal Plants'. Eds.
2. Atish: Ek Anmol Aushdhiya Paudha
3. Chora: Ek Mahatavpuran Aushdhiya Paudha
4. Kutki: Ek Bahumulya Ausdhiya Paudha
5. Mushakbala: Ek Bahuupyogi Jaributi

Research Reports

1. K.S. Kapoor, Sandeep Sharma and R. Singh (2006): Impacts of Deodar Stumps Removal on the Ecology of the Deodar Forests. Report submitted to the State Forest Department of Himachal Pradesh.
2. Sharma K.D, R. Singh, Vajinder Kumar and Pawan Kumar (2007): Mid term Evaluation Report of FDA Project for the state of Himachal Pradesh and Jammu and Kashmir.

CONSULTANCY

A report on "Sawara-Kuddu Hydroelectric Project: Status of Phyto-diversity: A Preliminary Analysis", prepared after doing the preliminary survey of the flora of the project site, was submitted to the Superintending Engineer (CP and CM), Pabbar Valley Power Corporation Ltd., Anand Vas, Vasant Vihar, Khalini, Shimla.

CONFERENCES/MEETINGS/WORKSHOPS/SEMINARS/SYPOSIA/EXHIBITIONS

Organized

1. A Project launch workshop/meeting under project entitled "Promotion of medicinal plants cultivation among rural communities for sustainable income generation"- under GIF, an



externally aided project was organized by this institute on 19th April 2006 at Nahan, Sirmour. People from different fields viz. SFD's, NGO's and farmers of the region participated in the meeting.

2. Organized a one day workshop for Statistical and Socio-economic Evaluation of the Ongoing Research Projects on 16th May 2006. To accomplish the job in question Prof. Y.S. Negi, Head Department of Social Sciences and Prof. (Retd.) S.P. Dhall, Department of Sciences from Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, District Solan were invited as expert members.
3. Meeting of Research Advisory Committee of FRI, Deemed University, Dehradun was organized by this institute on 26th June 2006 to evaluate the Six Monthly Progress Reports of the Research Scholars doing Ph.D. under this centre. Pre-thesis seminar of the research scholar already registered with the Deemed University was also held besides a Pre-synopsis seminar of one research scholar. Director of the institute was the Chairman of the committee whereas Prof. Sarvesh Sood, Chairman, Department of Bio-sciences Himachal Pradesh university, Summer Hill, Shimla and Dr. V.D. Verma, Principal Scientist and Scientist Incharge, NBPGR, Phagli, Shimla were the Expert Member of RAC from out side the institute.
4. 'Farmers open meeting' was organized on 12th July 2006 at Nasogi for the farmers of Kullu valley to discuss about the prospects of commercial cultivation of medicinal plants in temperate region to diversify existing horticulture practices.
5. A one day workshop on "Forestry Research Need Assessment: Institutionalizing the Process in the State of Himachal Pradesh" was organized on 10th October 2006 at HFRI, Shimla, in which about 35 participants from Himachal Pradesh Forest Department, Research Organizations dealing in Forestry, Universities and NGOs participated. Input from the delegates was sought through presentations and discussions during the workshop. Shri Ashok Thakur, IAS, Principal Secretary (Forests), Government of Himachal Pradesh was the Hon'ble Chief Guest of this workshop.
6. Research Advisory Group (RAG) Meeting of this institute was organized on 18th October 2006 in which 15 ongoing research projects under PLAN and 14 externally aided on going research projects of the institute were evaluated by the Hon'ble members of the RAG. 4 new projects were presented before RAG by the concerned PIs, of which 2 were recommended by the RAG for the final approval of Research Policy Committee (RPC) of ICFRE. During this RAG meeting a presentation was also made on "Finding Economic Solutions through Natural Capital Enhancement" by Shri J.S. Walia, IFS, Chief Conservator of Forests (Sanjhi Van Yojna), HPFD, Shimla.
7. A workshop on "Status and Potential of Agroforestry in North-west Himalayas" was organized by HFRI, Shimla from 14th to 16th November 2006 in the Conference Hall of the institute in which about 60 participants from Himachal Pradesh Forest Department, Research Organizations dealing in forestry, Universities and NGOs participated. It was sponsored by State Land Use Board (SLUB) of Himachal Pradesh. Input from the delegates was sought on various aspects of agroforestry through presentations and discussions during the workshop. Shri Ashok Thakur, IAS, Principal Secretary (Forests), Govt. of Himachal Pradesh was the Hon'ble Chief Guest of this workshop. Shri R.A. Singh, PCCF, Himachal Pradesh Forest Department was also present.
8. Organized the workshop on '*Status and Potential of Agroforestry in North-Western Himalayas*' sponsored by State Land Use Board (SLUB), Himachal Pradesh Forest Department at HFRI from 14th to 16th November 2006.



Attended

1. After receiving invitation from the Joint Member Secretary, State Council for Science Technology and Environment, Himachal Pradesh, Shimla. Dr. Rajesh Sharma, Scientist-D from this institute attended one day meeting for Popularizing Bamboo Cultivation for Commercial Purpose in the State of Himachal Pradesh, which was held on 12th April 2006 at H.P. Secretariat.
2. Shri Surinder Kumar, IFS, Director, HFRI, Shimla alongwith Dr. K.S. Kapoor, Coordinator (Research), attended one day workshop on "Rain Water Harvesting, Artificial Recharge and Watershed Management" organized by Project Director, Himachal Pradesh State Forest Department in Consultation with Noble Institute for Premier Studies and Technologies Limited, New Delhi under Himachal Pradesh Forestry Sector Reforms Projects (HPFSRP) on 19th May 2006 at Jal Bhawan, Kasumpatti, Shimla.
3. Shri Surinder Kumar, IFS, Director, HFRI, Shimla attended one day International Policy Workshop on "Application of Space Technology for Monitoring of Natural Resources, Climate Change and Social Development" at Hotel Holiday Home on 31st May 2006 organized by Geo-informatics Research and Training, CSK, H.P. Agricultural University in collaboration with international Centre for Integrated Mountain Development, Kathmandu, Nepal and Department of Agriculture, Himachal Pradesh.
4. Shri Surinder Kumar, Director, IFS, HFRI, Shimla alongwith Shri K.S. Thakur, IFS, DCF, Head, Silviculture and Tree Improvement Division; Dr. Sandeep Sharma, Scientist-D and Shri Pitamber Singh Negi, Research Officer attended FRI-Centenary Celebration on 5th and 6th June, 2006 at FRI, Dehradun.
5. Shri Surinder Kumar, IFS, Director, HFRI, Shimla attended National Science Day 2006 on 20th July organized by Dr. Y.S. Parmar University of Horticulture and Forestry, Regional Horticultural Research Station, Mashobra, Shimla. During the celebrations he delivered a lecture on the "Role of Forests in Maintaining Good Environment".
6. Dr. K.S. Kapoor, Scientist and Coordinator (Research) attended Brain Storming Meeting for the formulation of Science and Technology Policy for Himachal Pradesh, which was organized by State Council for Science and Technology and Environment, Shimla on 21st July 2006.
7. Shri Surinder Kumar, IFS, Director, HFRI attended 8th Meeting of Management and Operation Committee of the Himachal Pradesh Forest Sector Reform Project held on 17th August 2006, where action taken report on the decision taken in the previous meeting and review of project progress was done besides other related matters pertaining to the project activities.
8. Dr. Sandeep Sharma attended and presented a paper during the National Workshop on 'Role of Forestry in Employment Generation and Rural Development' organized by FRI, Dehradun on 29th and 30th August 2006 at FRI, Dehradun.
9. Shri Surinder Kumar, IFS, Director, HFRI, Shimla attended Annual Day and Brain Storming Session on Institute's Vision Document of Govind Ballabh Pant Institute of Himalayan Environment and Development, organized by its Himachal Unit at Mohal, Kullu on 10th and 11th September 2006.
10. Dr. K.S. Kapoor, Coordinator (Research) of the institute attended an International Symposium on Breeding and Improvement of Asian Conifers during 20th Century, organized by University of Horticulture and Forestry, Solan and Forest Research Institute, Dehradun from 11th to 13th September 2006 at FRI, Dehradun.



11. After receiving invitation from Dr. Shashi Kumar, IFS, Director (Research) ICFRE, Dehradun, Shri Surinder Kumar, IFS, Director, HFRI, Shimla attended a meeting of Stakeholders on the Proposed Policy Reforms to remove the Barriers to CDM Afforestation and Reforestation Projects at ICFRE, Dehradun on 14th and 15th September 2006
12. Shri Surinder Kumar, IFS, Director, HFRI, Shimla attended ICFRE Society meeting, which was held under the Chairmanship of Shri A. Raja, Hon'ble Minister for Environment and Forests, Govt. of India on 22nd November 2006 at Paryavaran Bhawan, New Delhi.
13. Dr. K.S. Kapoor, Coordinator (Research) attended 2 days working group meeting for setting up of regional centre for Monitoring Glacial Environment and Climate Change in Himachal Pradesh, which was organized by State Council of Science Technology and Environment at Hotel Holiday Home on 23rd and 24th November 2006
14. Dr. R.K. Verma, Scientist-D of this Institute attended a National seminar/ meet of Stakeholders of Forestry Statistics, organized by Indian Council of Forestry Research and Education, Dehradun on 29th and 30th November 2006 under IITO-ICFRE collaborated project.
15. Shri Surinder Kumar, IFS, Director, HFRI, Shimla and Dr. R.K. Verma, Scientist-D of this institute attended the consultative workshop on "Impact Assessment of Himachal Pradesh State Roads Project on Forest, Wildlife and Bio-diversity Issues" held on 14th December 2006 at Hotel Holiday Home, Shimla as organized by the Himachal Pradesh Public Works Department.
16. Dr. Vijender P. Panwar, Scientist-B attended meeting of Nodal Officers, which was convened by ADG(M&E) at ICFRE, Dehradun from 27th to 29th December 2006 for devising format and other strategies, etc. for evaluation of FDA projects, the consultancy for which has been awarded to ICFRE by NAEB.
17. Dr. K.S. Kapoor, Public Information Officer for HFRI, Shimla attended a Technical Workshop on the "The Right to Information Act, 2005" held on 18th and 19th January 2007 at New Delhi. Institute of Socio-economic Research and Action (ISERA) at Hotel Cannaught, New Delhi, conducted the workshop in question.
18. Dr. Rajesh Sharma, Scientist-E of this institute attended three days National Conference on "Increasing Forest Productivity: Genetic and Breeding Options" as organized by Tropical Forest Research Institute, Jabalpur from 21st to 23rd February 2007 and presented a research paper titled "Various Studies in Provenances and Plus Trees of *Pinus roxburghii* Sarg".
19. Dr. Sandeep Sharma, Scientist-D of this institute attended DBT Steering Committee meeting held on 20th February 2007 at the Department of Biotechnology, Govt. of India, New Delhi and presented the progress made by him as a Principal Investigator under the project titled" Suitability of *Jatropha curcas* L. Seed Sources in Lower and Mid Himalayan Regions of Himachal Pradesh".
20. Dr. K.S. Kapoor, Scientist-E and Head, Division of Ecology and Biodiversity Conservation delivered an invited lecture on "Climate do Influence Forestry/ Floral Diversity" in a workshop on "Climate Change and its Impact on Farming Systems and Natural Resources" on 3rd March 2007 at University of Horticulture and Forestry, Solan.
21. Dr. Ranjeet Singh, Scientist-D of this Institute attended two days' Regional Seminar on "Mortality in Agro-forestry Tree Species" from 21st to 22nd March 2007 at Chaudhary Charan Singh, Haryana Agriculture University, Hisar and presented a research paper titled "Drying off Tree in Forest Eco-systems of North-Western Himalayas An Entomologist's View".



22. Attended an International Seminar on "Soil and forest degradation in the Himalayan region" organized by Norwegian University of life sciences, Norway and Institute of Integrated Himalayan Studies, Shimla (HP) at Shimla on 5th and 6th April 2006.
23. Attended and actively participated in National Workshop on "Status and potential of agro-forestry in North- Western Himalayas" held at Himalayan Forest Research Institute, Shimla (HP) from 14th to 16th November 2006.
24. Dr. Ranjeet Singh attended a National Congress on Entomology, organized by Department of Zoology, Punjabi University, Patiala from 15th to 17th March 2006.
25. Dr. Ranjeet Singh attended a National workshop on "Status and Potential of Agroforestry in North-Western Himalaya" organized by Himalayan Forest Research Institute, Shimla from 14th to 16th November 2006.
26. Shri Surinder Kumar, Sh. K. D. Sharma, Dr. Rajesh Sharma and Dr. Sandeep Sharma attended and actively participated in forestry workshop on 'Package of Practices for forestry plants' at Dr. YSP University of Horticulture and Forestry, Nauni (Solan) H.P. on 7th and 8th November 2006.

EXHIBITIONS

Institute participated in Kisan Mela under the banner "Khushhali Ke Liye Alu" which was organized by Central Potato Research Institute on 15th June 2006 at Kufri, where activities of the institute were displayed for the benefit of people in general and for the farmers in particular.

AWARDS

1. Dr. Sandeep Sharma, P.S. Negi, K.S. Thakur and Surinder Kumar from HFRI were awarded with prestigious 'Brandis Prize' on the auspicious occasion i.e. Centenary Celebration Day of FRI at FRI, Dehradun on 5th June 2006 for the valuable contribution in the Indian Forester titled "Studies on Vegetative Propagation of *Colutea nepalensis* Sims through Shoot Cuttings: A Potential Species for Cold Desert Afforestation" in the field of Silviculture for the year 2004.
2. HFRI was awarded second best exhibition stall prize in Kisan Mela, organized by Central Potato Research Institute, Shimla at Kufri on 15th June 2006.

DISTINGUISHED VISITORS

1. Shri A.K. Wahal, IFS, Deputy Director General (Education), ICFRE, Dehradun visited the institute on 19th June 2006 and assessed the progress of ongoing research activities/ projects of the institute. He also held discussions with the officers and scientists of the institute.
2. Mr. B. Islam, IFS, Chief Conservator of Forests (Monitoring and Evaluation) visited this institute on 21st August 2006. During his visit, past achievement of the institute alongwith ongoing research activities were discussed.
3. Mr. Vinay Tandon, IFS, Principal CCF (Wildlife) visited this institute to discuss about the ongoing research activities of this institute. During discussion he was apprised of the work which has been/is being carried out by the institute towards assessment of floristic works in the wildlife sanctuaries of Himachal Pradesh.



4. Shri Ashok Thakur, IAS, Principal Secretary (Forests), Govt. of Himachal Pradesh and Shri R.A. Singh, PCCF, Himachal Pradesh State Forest Department visited the institute on 14th November 2006 for inauguration of National Level Workshop.

MISCELLANEOUS

In accordance with the instructions from Central Vigilance Commission, New Delhi, a 5 days Vigilance Awareness Week was observed from 6th to 10th November 2006 by the institute. During the week a specific pledge in this regard was also taken up.

