NEW PROJECTS INITIATED DURING THE YEAR 2008-2009

PLAN PROJECTS

Project 1: Ecological assessment of floristic diversity in Kalatop Khajjiar Wildlife Sanctuary of district Chamba, Himachal Pradesh [HFRI-040/ 02(EBC-13) PLAN/ 2008-2011]

Status: Selected the study sites and carried out phytosociological studies in alpine pasture from Dankund to Jyot, altitude wise from Lakadmandi to Khajjiar and Khajjiar to Sach areas of Kalatop-Khajjair wild life sanctuary. Total number of plant species in alpine pasture from Dankund to Jyot were about 30. Documented the plants of medicinal value from the studied areas.

General View of the Sanctuary

Podophyllum hexandrum

Roscoea alpina

Project 2: Management of Indian Gypsy Moth (*Lymantria obfuscata*) in Himachal Pradesh. [3-[FPD-4(6)]HFRI/2008-2013]

Status: Native baculovirus strains of LONPV was harvested from the infected larvae feeding on ban oak forest. The purified occluded bodies were applied with 5 different dilutions on IGM larvae in the dose-mortality-bioassay experiment to get LD^{50} and LD^{90} value of the virus.

Project 3: Survey and bioecology of potential insect pest and pathogen of cone and seed of *P. gerardiana* Wall.

Status : During this period a survey tour was organized to the Kinnaur and six sites at four localities i.e. Kalpa (Pangi), Labrang, Kilba and Jhangi were selected for carrying out different survey and observational activities. These areas are surveyed to assess the infestation of insect-pests and pathogens on the cones and seeds of the Chilgoza pine. Samples were also collected from these sites. Field visits and assessment of preharvest infestation on cones and seeds of pines i.e. *P. gerardiana* has been recorded. Samples have been collected from field for post harvest evaluation of infestation of insect pests on cones and seeds. Isolation of insect-pests and pathogens heve been isolated from infected cones and seeds. New seed bore i.e. borer *Cateremna tuberculusa* Meyrick, 1882 have been reported for the first time as a seed pest of Chilgoza Seed. Life History of seed borer *Cateremna tuberculusa* Meyrick, 1882 of Chilgoza has been recorded for the first time. Further investigation on damage by the insects and pathogens on the cones and seeds of Chilgoza is in progress.

Project 4: Assessment of nutritional status of most preferred wild edible plants of Kinnaur District, Himachal Pradesh [HFRI-043/07(NWFP-02) PLAN/2008-2011].

Status: A Questionnaire for documentation of wild edibles was prepared and used to collect information on wild edible plants from Kalpa, Rogi, Pangi, Akpa, Rarang, Asarang, Sangla, Batseri, Raksham, Chitkul and Nichar villages. Information on 21 wild edible plants was documented and most preferred wild edible plants were prioritized. Preliminary nutritional analysis of wild edible fruit samples is in progress.

Fruits of *Viburnum cotinifolium*

Unripe fruits of *Hippophae salicifolia*

Project 5: Population genetic analysis and characterization of *Cedrus deodara* germplasm through DNA based markers) [HFRI-044/05(SFG-14)PLAN/2008-2011].

Status: Collected plant samples (needles) from 11 populations from the state of Himachal Pradesh. These samples were collected from 50 individual trees selected randomly within the population with each selected tree photographed, numbered and geo-referenced. Standardized genomic DNA isolation and purification techniques at FRI Dehra dun.

Selected trees of Deodar for DNA analysis

Project 6: Development of techniques for raising Deodar (*Cedrus deodara*) plantations through tall plants [HFRI-045/04(SFG-15)PLAN/2008-2011]

Status: Carried out survey and selected forest near Shillaru in Shimla district for extraction of Deodar wildlings for experimental purposes under the project. Besides this, also selected a site near Shillaru nursery for establishing pilot scale field trial. Carried out experimental plantation of Deodar tall wildlings during August 2008 on that selected site. Nursery studies for raising tall plants could not be initiated as Deodar seeds of last year's collection (2007 was considered as bad seed year in case of Deodar) failed to germinate in nursery. Fresh seeds of Deodar were collected during October 2008 and subsequently sown in the nursery for studying the techniques of raising Deodar tall plants. Growth and survival data pertaining to experimental plantation are being recorded regularly. However, initial field survival results of Deodar tall wildlings are not encouraging.

Field Planting of Tall Wildlings of Deodar