

DST Project
Studies on improving livelihood generation through scientific interventions in *Pinus gerardiana* Wall. and important wild mushrooms in Himachal Pradesh

Project on Studies on improving livelihood generation through scientific interventions in *Pinus gerardiana* Wall. and important wild mushrooms in Himachal Pradesh has been sanctioned by Department of Science and Technology (DST), GoI under the Location Specific Research & Technology Development (LSR). The joint project of Himalayan Forest Research Institute (HFRI) and Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE) accounts for Rs. 2,25,59,200/- for a duration of 3 years.

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Introduction

Pinus gerardiana, commonly known as chilgoza or neoza pine belongs to family Pinaceae. It is a small to medium sized evergreen tree with compact appearance and short lateral branches. Its distribution is very sparse in the world, confined only to mountains of eastern Afghanistan, Pakistan with scattered appearance in North-western Himalayas. In Himachal Pradesh, it is mainly distributed in Kinnaur district and small patches had also been recorded in Pangi and Bharmour parts of Chamba district. *Pinus gerardiana* is well known for its edible seed. The seed (chilgoza) is eaten as dry fruit which is rich in oil, starch, and albumenoids. Seeds are obtained from cones which are still green. The cones are gathered from the trees, heaped up, and burned to open them, after which the seeds are picked out. The chilgoza fetch very high price ranging from Rs. 400-650/kg in the open market and play an important role in socio-economic uplift of the people in tribal areas of Himachal Pradesh and Jammu and Kashmir

Mushrooms are well known to people all over the Asian countries as an important bio-source of novel secondary metabolites. In India, particularly the alternative systems of medicine, utilize the curative properties of mushrooms. The secondary metabolites of these mushrooms are chemically diverse and possess a wide spectrum of biological activities, which are explored in traditional medicines and in new targets of molecular biology. They have important present status and possess a potential to design future strategies for human health values.

Rationale for taking up the project

The state of Himachal Pradesh is bestowed with rich diversity of plant wealth distributed all along the altitudinal zones from the lower hill to high hill zone including alpine scrub of western Himalayan region. The floral wealth is represented by different species of valuable plant species that are being used by the rural people in different ways in their day to day life for meeting their demands of timber, fuel wood, fodder, shelter and also in traditional health system. Once, Himachal Pradesh had rich resources of medicinal plant wealth, however, with the increase in demand of this valuable natural plant based raw materials in the national as well as in the international market coupled with unscientific extraction of raw materials from the natural habitat, some of these plant species are on the verge of extinction.

Objectives of the project

***Pinus gerardiana* Component:**

1. To study current harvesting practices and its impact on cone production.
2. To determine maturity indices for seed collection and suitable storage conditions for enhancing seed longevity.
3. To screen out best seed sources for raising quality planting stock.

4. Mapping of *P. gerardiana* geographical area and best seed sources.
5. Development of extension material for dissemination of technology to end users and awareness generation.

Mushroom Component:

1. Exploration, identification and conservation of wild edible, poisonous and Medicinally important mushrooms.
2. Biochemical characterization of important wild mushrooms.
3. Geotagging of species wise location in the study area.
4. Training of rural households on conservation and preservation of important Wild Mushroom.

Work Progress: A meeting of Himalayan Forest Research Institute (HFRI) and Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE) teams of DST sponsored project “Studies on improving livelihood generation through scientific interventions in *Pinus gerardiana* Wall. and important wild mushrooms in Himachal Pradesh” was held on 04.01.2018 in Conference Hall, HIMCOSTE.

A field visit of District Kinnaur was undertaken from 9th to 12th January, 2018. The proposed nursery site and research station was visited estimates for cost of renovation of the building proposed to be developed into research station was taken from Divisional Forest Office Reckong-Peo. GPS locations of *Pinus gerardiana* forest at Akpa and Jangi area of Kinnaur district were recorded. Administrative and forest division map of Kinnaur district and data related to chilgoza working circle of Kinnaur district were also collected.

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