



REPORT ON TRAINING PROGRAMME ON CULTIVATION AND CONSERVATION OF MEDICINAL PLANTS OF COLD DESERT ORGANIZED AT NISR, LEH, UT LADAKH (June12-14, 2024)

ICFRE-Himalayan Forest Research Institute, Shimla organised a training cum demonstration programme for the other stakeholders on the title '**CULTIVATION AND CONSERVATION OF COLD DESERT MEDICINAL PLANTS FOR LIVILHOOD GENERATION**' from 12-14 June, 2024 at National Institute of Sowa- Ripa, Leh, UT Ladakh. Ministry of Environment, Forest and Climate Change (MoEF&CC), GOI, provided the necessary financial assistance to conduct the training programme under the scheme to aware the other stakeholders towards medicinal plants cultivation and their conservation. A diverse group of 30 participants from the agriculture, horticulture, education (faculty members and students), ITBP personnel, and representatives of NGOs like Ladakh Ecological Developmental Group and Ladakh Environmental and Health Organisation (LEHO) took part in the three days training programme. Dr. Padma Gurmet, Director NISR, Leh graced the inaugural session of the training programme as chief guest. Details of training and demonstration programme are described below.

Day One (12.06.2024)

Inaugural Session: Sh. Dushyant Kumar, Sr. Technical Officer, HFRI Shimla initiated the proceedings and it starts with the auspicious lighting of lamp by chief guest and dignitaries and felicitation of the chief guest by Dr. Sandeep Sharma, Director, HFRI. Thereafter, a formal welcome address was given by Director HFRI extending a heartfelt welcome to the chief guest and participants from different line departments, institutes and non-governmental organisations, etc. Then, Dr. Joginder Singh Chauhan, Chief Technical Officer and coordinator of the training programme presented a brief overview about the three days programme and said that the training has been envisaged with the aims to provide a blend of practical as well as theoretical knowledge about the medicinal plants cultivation and income generation avenues linked to this sector. He informed that apart from the talks of experts/resource persons, the field trips/ visits have also been scheduled so as to impart practical knowledge about the identification and cultivation of medicinal plants of cold deserts to the participants. He told that medicinal plants can contribute to ecotourism and generation of livelihood.

In his in-inaugural address, Dr. Padama Gurmet appreciated the endeavours of ICFRE-Himalayan Forest Research Institute for organising training programmes on varied aspects at Leh from time to time. While addressing the participants, he said that due to the peculiar climatic conditions, the trans-Himalayan Ladakh region is blessed with many plant species of high medicinal and aromatic properties. He also informed that the medicinal plant wealth of the cold desert has been the basis of traditional healthcare systems and Sowa-Rigpa is also based on the skilful use of different plants species to treat the various ailments. He hoped that participants will achieve significant knowledge on the cultivation and conservation of medicinal plants and disseminate the learning to other end users.

Technical session begins with the presentation of Dr. Jagdish Singh, Scientist- G, ICFRE-HFRI, Shimla, who made presentation on identification and uses of medicinal plants. He initially highlighted the immense medicinal wealth of Himalayas and elucidated the importance of correct identification of plants. He also shared useful information among participants about the key vegetative and floral characteristics, habitat ecology, distribution range and uses of different medicinal plants including *Podophyllum hexadrum*, *Aconitum* spp, *Picrorrhizza kurroa*, *Dactylorhiza hatagirea*, *Ferula jaescheana*, *Inula racemosa*, etc. During the presentation, participants interacted with him and asked questions about the medicinal plant species present in Ladakh region.

After this, Dr. Sandeep Sharma, Scientist-G, ICFRE-HFRI, Shimla shared his experiences and knowledge about the characterisation, Active Ingredient (AI) content, harvesting protocols of various medicinal plants of NW Himalayas and trans-Himalayan areas. Besides this, he also discussed at length the nursery and plantation technique of important cold-desert plant species i.e. Himalayan Pencil Cedar (*Juniperus polycarpus*). He said that the species holds a multi-fold importance in the ecological and social milieu of cold and arid regions and there are germination, regeneration and double dormancy related issues. He also explained about the technique developed by HFRI to address these problems. Participants asked questions specifically about the cultivation of temperate medicinal plants with horticultural and agricultural crops. Sh. Vikram Katoch, Tourism entrepreneur, Keylong L&S talked about medicinal plants of cold deserts as a source of additional income for rural communities.

Dr. Tashi Stobgais, Associate Professor, NISR, Leh delivered a talk on Status, propagation and ex-situ cultivation of trans- Himalayan medicinal plants. He explicitly highlighted the importance of five basic elements of life (panchmahabhutas) viz. akasa, vayu, agni, jala and prthivi and said that everything including living beings and medicinal herbs are constituted by these five elements and they affect the various processes/functioning of cells and body as a whole. Further, he also talked about properties and multiple uses of healing herbs of arid region like Ladakh and provided informative insights about the ex-situ cultivation practices.

In continuation with, Dr. Jagdish Singh made an illustrative presentation on the cultivation of medicinal plants for augmentation of rural income. He shared the success story of cultivation of intercropping of medicinal plants in Apple orchards in Himachal Pradesh and informed the participants that it provides good alternative to earn income from the interspaces left in the orchards and the ultimately it turns into a win- win scenario. He also apprised the participants about the promising varieties of temperate medicinal plants released by HFRI.

Finally, interactive session was held at the end of the first day proceedings and all the participants showed their active involvement putting queries before the resources persons. Mostly questions were focussed on the proper identification of medicinal plants in wild and cultivation protocols. The participants from the education department were eager to know about the meticulous procedure of identification of different active ingredients present different medicinal plants. The resources persons answered the questions satisfactorily.

Day Two (13.06.2024)

The second day of training programme was fully devoted to field trips for providing tangible experiences of identification and demonstration of cultivation of important medicinal plant of

arid regions. Dr. Joginder S. Chauhan, CTO, Sh. Dushyant Kumar, STO and Sh. Ajay Thakur coordinated the field visits of trainees. Firstly, participants were taken to the research farms/experimental plots of Defence High altitude Research (DIHAR). Ms. Vinita, Senior Technical Assistant (STA) explained about the various standardised organic techniques, low cost double walled polyenches cultivation and post-harvest technologies developed by DIHAR in the field of medicinal and aromatic plants. The trainees were also taken to the germplasm collection area of *Prunus armeniaca* (Chulli). After that, the trainee visited India's highest Trans-Himalayan Herbal Garden under NISR National Institute of Sowa-Rigpa (NISR and located around 15 kms from the Leh town. Dr. Tsewang Rinchan, Research Officer and Miss Skalzung, SRF, NISR, Leh imparted knowledge about the on-going research activities/trials and in-situ conservation at herbal garden on different endangered medicinal plants of cold desert e.g. *Saussurea lappa*, *Dactylorhiza hatagirea*, *Rheum* spp, *Inula racemosa*, *Hippophae rhamnoides*, *Aconitum heterophyllum*, *Arnebia euchroma*, *Rhodiola* spp, *Ephedra gerardiana*, etc. The participants got on spot useful information about more than 100 medicinal plants growing under green house, underground trenches/poly tunnels and in open conditions. Besides this, the process of vermi-compost preparation was demonstrated to the trainees. At last, participants visited the Van Vigyan Kendra cum Field Research Station of ICFRE-HFRI, Shimla at Badami Bagh, Leh. Dr. Joginder S. Chauhan briefed about the research activities of institute and demonstrated the plantation of *Juniperus ploycarpos* (Shukpa). He also made participants aware about morphological features of this plant species and clarified their doubts on closely resembling conifer species. The trainees found day rewarding and appreciated the field visits as they got closer interface with the medicinal plants of trans-himalayas.

Day Three (14.06.2024)

On the third day of the training programme, Dr. Sandeep Sharma shared his knowledge on the Modern nursery techniques for cultivation of medicinal plants. He discussed the various ecological concerns in NW Himalayas perspective and explained details of nursery establishment on the basis of topographical attributes of the region. Apart from that, he also provided insights about organic farming. Dr. Tsewang Rinchan, Research Officer, NISR delivered a talk on Value addition of medicinal plants for sustainable income generation. He apprised the participants about multiple aspects of medicinal plants cultivation, cost benefit economics, additives and adulterants etc. The next talk of this session was given by Dr. Kunzes Angmo, Scientist at High Mountain Arid Agriculture Research Institute, Stakna, Leh. The topic of her presentation was interwoven traditions: cultural and ecological insights into plant use in Ladakh and she mainly focussed on the linkages between traditional knowledge, cultural practices and medicinal and other usages of plants. She also shared the findings of her research work. Similarly, Dr. Joginder also interacted with the participants and gave an informative talk on importance of ethnobotany of medicinal plants. He said that like Ayurveda, ethnobotany is age old science and it signifies the traditional knowledge or use of plants by indigenous communities for medicinal and religious purposes. In his presentation, he also stressed that traditional knowledge is barely transferred and there are gaps. He emphasise for more and more documentation the indigenous traditional knowledge (ITK) on medicinal plants.

Lastly, Sh. Zabir Ahmed, Resource person from CSIR-Indian Institute of Integrative Medicine (IIIM) interacted with the participants. He talked about the different initiatives taken up for promoting organic farming and augmenting rural income through medicinal plant cultivation.

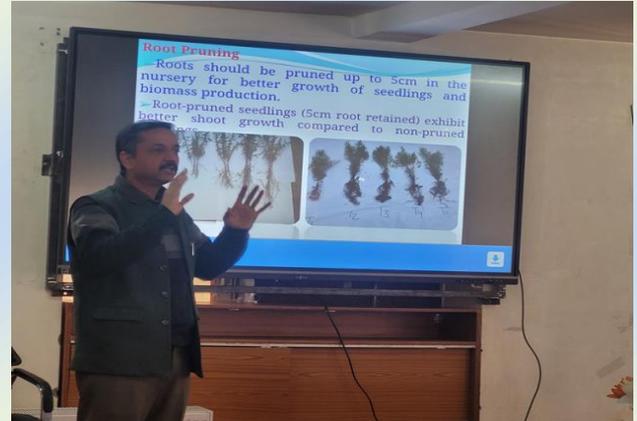
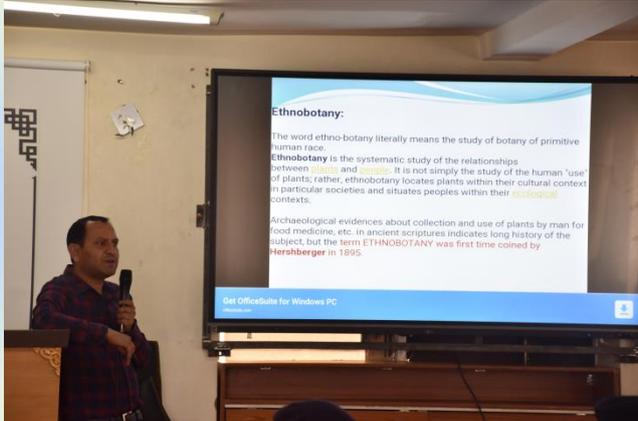
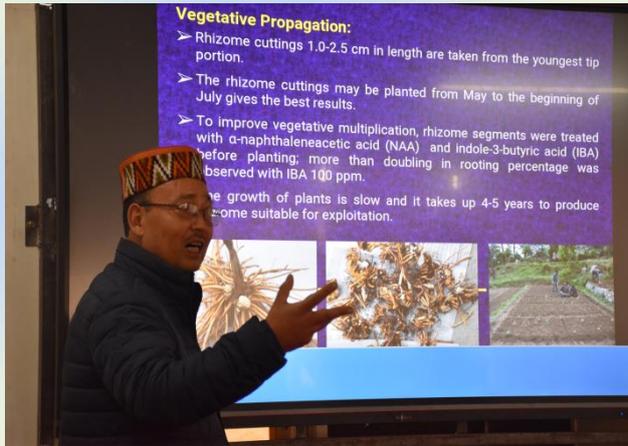
Valedictory Session: In this session on the third day, Dr. Joginder Singh, Training coordinator, requested training participants to share their experiences and give valuable suggestions. Participants asked different questions and also expressed their reviews/feedback about the training programme. Discussions were held among participants and experts and queries of training participants were satisfied with expert opinions. Dr. Singh, Training coordinator, assured that the suggestions of the participants will be incorporated in the future training programmes.

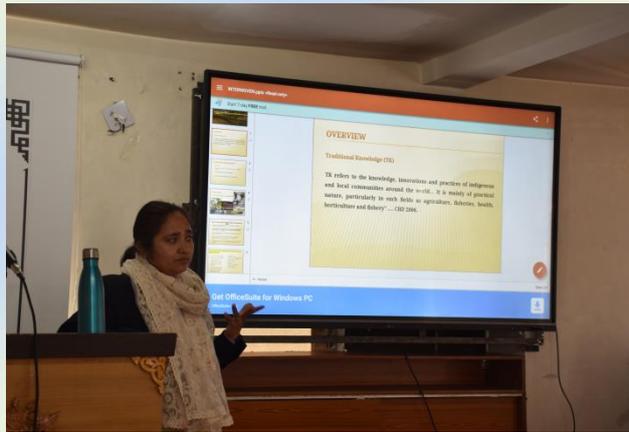
Dr. Sandeep Sharma, Director, ICFRE-HFRI, Shimla was the Chief Guest during the valedictory session of the Training Program. He hoped that training participants from diverse field would be benefited from this training programme. He advised all training participants to implement it in their area and share knowledge among other people., thanked all the participants for showing keen interest in lectures delivered on the topics related to the cultivation of medicinal plants of cold desert. By and large, all were happy to take part in the training programme and gain versatile knowledge on medicinal plants cultivation and conservation and found this training programme very useful. They expressed their gratitude to the ICFRE-HFRI, Shimla for organizing this Training Program. Dr. Sharma also assured that the suggestions of the participants would be incorporated in future Training Programmes. He thanked all the Resource Persons and all the participants for their active participation. Sh. Dushyant Kumar, STO & Training Co- coordinator, ICFRE-HFRI, Shimla anchored the stage during three days training programme. Three days training programme concluded with distribution of certificates to the participants and formal vote of thanks by Training coordinator Dr. Joginder Singh Chauhan.



☆ Snippets of Training programme ☆









Field Visit





Group photo



MEDIA COVERAGE

ICRE-HFRI Shimla imparts training on cold desert medicinal plants



Reach Ladakh Correspondent

LEH: Three days training cum demonstration programme on cultivation and conservation of important cold desert medicinal plants for livelihood generation commenced at National Institute of Sowa Rigpa (NISR), Leh, UT Ladakh on June 12.

The training cum demonstration programme is being organised by ICFRE-Himalayan Forest Research Institute, Shimla, Himachal Pradesh for other stakeholders and is sponsored by the Ministry of Environment, Forests and Climate Change, Govt. of India.

The training programme is being attended by thirty representatives from different line departments including Agriculture, Horticulture, Education, Sowa Rigpa, ITBP, NGOs, etc.

Director, NISR, Leh, Dr. Padma Gurmet said that the cold desert Ladakh region under the Indian Trans Himalayas is an emporium of medical and aromatic plants resource in the country. He also talked about the Medical and Aromatic plants (MAP's) of the cold desert region which are in great demand by pharmacies as well as for local consumption. As a result, the majority of them are threatened and face endangered status.

He elucidated the fact that large scale consumption and unscientific harvesting of medicinal and aromatic plants from the natural habitats has resulted in their extinction from the wild and presently ayurvedic and pharmaceutical industries are facing the problems of raw material.

Chief Technical Officer, HFRI and training coordinator Dr. Joginder Singh

Chauhan informed that the main objective of the training programme is to impart knowledge to the other stakeholders about rich medicinal wealth of cold-desert regions and train them as master trainers for further dissemination amongst various end users.

Director, HFRI Shimla, Dr. Sandeep Sharma said that cultivation of medicinal plants by the local communities assumes paramount significance and may be adopted as an alternate income-generating source which may fetch considerable benefits and improve the living standard as well.

Dr. Sandeep Sharma also talked about the nursery and plantation techniques of *Juniperus polycarpus* (Shur/shupka), which is an important tree species of cold desert region. He informed that this species is very difficult and with intense research, the institute has developed nursery and plantation technique of the species and has disseminated it to forest department of Himachal Pradesh, UT Ladakh and UT J&K through training and demonstration programmes.

Scientist, HFRI, Dr. Jagdish Singh said that heavy biotic pressure, ruthless extraction and illegal trade however are well acknowledged with other factors contributing to endangerment of medicinal plants. He added that cultivation of medicinal plants will reduce pressure on natural habits.

Associate Professor, NISR, Dr. Tashi Stobgais also interacted with participants about status, propagation and ex situ cultivation of trans-Himalaya medicinal plants.

ICRE-HFRI Shimla imparts training on cold desert medicinal plants

By Reach Ladakh Correspondent *Leh*, Jun 13, 2024



<https://www.reachladakh.com/public/index.php/news/social-news/icre-hfri-shimla-imparts-training-on-cold-desert-medicinal-plants>

Indus dispatch:

<https://indusdispatch.in/icre-hfri-shimla-imparts-training-on-cultivation-conservation-of-cold-desert-medicinal-plants/>

Coverage on electronic media:



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