

**“A REPORT ON THE EXPOSURE VISIT CUM TRAINING TO CSIR-
INSTITUTE OF HIMALAYAN BIORESOURCE TECHNOLOGY,
PALAMPUR”**

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**Prepared
by**

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Introduction:

The primary objective of this visit is to facilitate a practical and immersive learning experience for farmers from Meghalaya regarding the cultivation, initial processing, value addition, and marketing of Medicinal and Aromatic Plants (MAPs) suitable for the temperate region, particularly in the context of Meghalaya.



This Exposure Visit holds immense significance for farmers, as it serves as a platform for the exchange of knowledge, experiences, and best practices between farmers from diverse regions. Furthermore, it facilitates a robust interactive environment where participants can learn from one another and gain practical insights into the successful

cultivation of aromatic crops that contribute to sustainable livelihoods. This initiative aligns with the objective of empowering farmers with scientific knowledge and practical skills, fostering growth in the agricultural sector and enhancing the economic well-being of farming communities in Meghalaya.

CSIR-Institute of Himalayan Bioresource Technology (IHBT) located in Palampur, Himachal Pradesh, India, is a premier research institute under the Council of Scientific and Industrial Research (CSIR). IHBT plays a vital role in promoting the Aroma Mission by conducting research, development, and training activities related to the cultivation and processing of medicinal and aromatic plants (MAPs) that thrive in the temperate climate.



IHBT contributes to the Aroma Mission by conducting research on MAPs, providing quality planting material, offering training programs, transferring technology, establishing quality standards, and creating market linkages for MAP-based products. This supports sustainable MAPs cultivation and benefits farmers and the aromatic industry in India.

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Sitting at the foot hills of the Western Himalayas, Himachal Pradesh and Meghalaya share similar climatic conditions, characterized by comparable rainfall patterns and vegetation. This similarity in climate and environmental factors presents a significant

opportunity for Meghalaya to replicate the cultivation of various medicinal and aromatic plants such as Scented Rose, Rosemary, Tegetes minuta, Geranium, Lavender as well as different varieties of flowering/ ornamental plants and fruits. Given these shared conditions, Meghalaya has the potential to successfully adopt and cultivate these plants, offering opportunities for economic growth and diversification in agricultural practices in the region.

In light of the above background provided, the Institute of Natural Resources, Meghalaya, with financial support from the Meghalaya Farmers Empowerment Commission, Government of Meghalaya, effectively conducted a five-day Exposure

Visit to CSIR-IHBT, Palampur.

This program was divided into two batches, with 22 participants in each group under the leadership of Dr. H. Siangbood, Project Scientist and Shri. Markshield Warjri, Technical Assistant INR. Participants included farmers and Block-level officials.



The visit included four days of training, farmers field visit, practical demonstrations, and productive interactions between farmers and scientists from both states.

Objective of the Program: The main objectives of the training are as follows:

- Gain insights and knowledge about the diverse research initiatives at the Institute.
- Participate in farm visits to grasp the recommended practices for different crops.
- Observe and receive demonstrations on economically valuable aromatic plants.
- Visit farmers' fields to witness practical applications.

DAY 1: INAUGURAL FUNCTION AND FARM VISIT

The first day of the training featured an Inaugural function attended by the Director and Senior Principal Scientists, along with technical experts from the Institute. During the event, the Director emphasized the value of collaboration between IHBT and INRM, highlighting its potential for mutual benefit through technology exchange and skill development. He also highlighted the importance of the Aroma Mission in improving rural livelihoods and crop diversification. Furthermore, he expressed IHBT's readiness to assist Meghalaya's farmers in various agricultural aspects.



Following the inaugural event, Dr. Rakesh Kumar, a Senior Principal Scientist and Programme Coordinator, delivered an introduction to the CSIR Aroma Mission and IHBT. In his presentation, he placed particular emphasis on



aromatic crops that are well-suited for Meghalaya, such as *Tegetes minuta*, Lemongrass, Citronella, Damask Rose, Marigold, and more. Dr. Kumar provided detailed insights into the recommended practices for each crop and their economic significance. Additionally, his presentation covered topics like enhancing value, maintaining quality, and the economics associated with each crop.

A visit to Chandpur Farm was also organised during the second half



of the programme. This visit provided the team with insights into various cultivation

techniques for Medicinal and Aromatic Plants (MAPs), methods for raising nurseries for MAPs and low-chilling apple trees, and the operation of the Distillation Plant. The



visit to this farm sparked the farmers' interest and facilitated more effective interactions with technical experts.

DAY 2: INTRODUCTION TO THE FLORICULTURE MISSION AND IMPROVED CULTIVATION OF SUITABLE FLORICULTURE CROP FOR MEGHALAYA

Dr. Bhavya conducted a lecture on promoting floriculture crops for entrepreneurship



development. Entrepreneurial development and the integration of cutting-edge technology into floriculture are of paramount importance. The mission addresses critical issues, including reducing reliance on international markets for domestic requirements and raising farmer awareness about the advantages of floriculture. The mission's focus is on promoting the

cultivation of high-value, low-volume crops, such as tulips, oriental lilies, carnations, roses, and more. Additionally, it includes the development of value-added products, the establishment of vertical gardens, and engaging in landscaping activities to empower farmers and advance the floral industry. Training, distribution of planting materials, and addressing challenges like the lack of cold chains are crucial components of the mission.



Dr. Bhargav also discussed specific crops, their cultivation techniques, and the potential for high returns in various regions. He highlighted the promotion of flowers



like liliun, carnation, and marigold in Himachal Pradesh, as well as the unique conditions for growing tulips in Ladakh, Srinagar, and Himachal. The mission also focuses on introducing innovative technologies like hydroponics to maximize crop yields in a shorter timeframe. Furthermore, Dr. Vikas emphasized the environmental benefits of certain flowers that can aid in indoor air purification by removing pollutants.

An exposure visit to various flower gardens was organized, along with visits to mushroom cultivation and production areas. IHBT is renowned for its Shiitake



mushroom cultivation technology, which can be readily adopted by farmers and cooperatives. A notable technology available is the production of Shiitake mushrooms enriched with Vitamin D.

During the latter part of the second day, a brief discussion was held regarding the crucial importance of quality control for essential oils, presented by Dr. VijayKant Agnihotri, a senior Scientist, IHBT. This was



followed by visits to various research and development laboratories within the Institute and value addition production unit.

DAY 3: FIELD VISIT TO FARMERS' FIELDS:

Himachal Pradesh's cold climate makes it an ideal location for cultivating roses and wild marigolds. IHBT has developed high-yielding varieties of both these crops and has successfully transferred these varieties to farmers' fields. These crops offer substantial economic returns. Given that the climate in Meghalaya is similar, there's potential to introduce these crops in the state.

On the third day of the training program, a field visit to progressive farmers' fields in Dehra/Bir District. Kangra was organized. Participants were taken to a high-altitude village where *Rosa damascena* (Damask Rose) and *Tegetes minuta* (Wild marigold), the two high value aromatic crops were being cultivated by farmers in large scale. This visit allowed participants to engage in direct interactions with farmers from both regions, enabling them to clarify doubts and learn about the various practices employed for the successful cultivation of these crops.



DAY 4: CLOSING SESSION

On the fourth and final day of the training program, an important closing session was conducted, which also featured an interactive discussion between the farmers and the scientists. This session held particular significance as it provided a platform for the exchange of ideas, experiences, and knowledge between the two key stakeholders in the field of medicinal and aromatic plants. The closing session was graced by the presence of esteemed Scientist Dr. Sanatsujat Singh, Chief Scientist and Dr. Rakesh Kumar, Senior Principal Scientist Agronomy at IHBT. Their participation underscored the importance of the event and the commitment of the institute to support and engage with farmers and participants.

Furthermore, during this event, planting materials were distributed to all the farmers who attended the training program. These planting materials are crucial for initiating and expanding Aromatic cultivation, and their distribution was a practical step to



enable farmers to implement the knowledge they had gained during the training. In recognition of their active participation and successful completion of the training program, each participant was presented with a training completion certificate. These certificates serve as a testament to the skills and insights acquired during the program and can be valuable for future endeavors and collaborations in the field of MAPs.



The closing session and the associated activities not only marked the end of the training program but also symbolized the ongoing commitment of IHBT and its collaborators to empower farmers, foster knowledge sharing, and promote the Aromatic crops cultivation.

LEARNING FROM THE EXPOSURE VISIT/TRAINING:

1. **Extension of Technical Support:** Participants learned about the invaluable technical support offered by IHBT. This support can significantly benefit farmers in addressing various challenges related to MAPs, floriculture, mushroom cultivation, and other aspects of agriculture.
2. **Crop Diversification:** The exposure visit emphasized the potential for diversifying crops in Meghalaya. This diversification has the potential to boost the local economy and improve the livelihoods of farmers in the region.

3. **Assured Market Demand:** Participants recognized the strong market demand for the crops discussed during the training. Both dry herbage and essential oils from these crops have substantial market opportunities, offering a reliable source of income for farmers.
4. **Peer Interaction:** The visit stressed the importance of peer-to-peer interaction among farmers. Sharing experiences and ideas with fellow farmers from different regions can be a powerful motivator. It can ignite the enthusiasm needed to explore new agricultural practices and revolutionize farming in Meghalaya.

The training provided not only technical knowledge but also inspired a collaborative spirit among participants. It highlighted the potential for sustainable and profitable agricultural practices in Meghalaya, ultimately contributing to the economic well-being of the farming community in the region.

Recommendation: Based on the visit to IHBT, Palampur, we strongly recommend the formal signing of a Memorandum of Understanding (MoU) between both institutions. This MoU will facilitate the exchange of knowledge and technology, enabling mutual learning and collaboration.

Acknowledgement: The team would like to acknowledge Meghalaya Farmers (Empowerment) Commission, Govt. of Meghalaya for extended financial support to the Aroma Mission for conducting the Exposure visit cum training and the CSIR-Institute of Himalayan Bioresource Technology, Palampur for providing all the logistic and technical support throughout the training.

LIST OF PARTICIPANTS:

Sl.No.	District	Name	Designation
1		Dr.Hygina Siangbood	Project Scientist, INRM
2		Diadema Nongrum	Field Assistant, INRM
3	WJH	Bi Up Dhar	Farmer
4		Deimiki Lamare	Farmer
5		Arkidaroi Sayoo	Farmer
6		Bina Sungoh	Farmer
7		Wandakini Lapasam	Farmer
8		Karbina.S.Passah	Farmer
9		Mitira Phyllei.	Farmer
10		Waimidashisha Wann	Farmer
11		Bhalang Kamar	Block Technical Assistant, Laskein C&RD
12		Shri.Tipki Suchiang	Block Technical Assistant, Laskein C&RD
13		Rangdamon Dkhar	Block Technical Assistant, Laskein C&RD
14	SWKH	Besterly Marwein	Farmer
15		Policy Lyngdoh Sangriang	Farmer
16		Jantison Nongsiej	Farmer
17		Rosemilda Lyngdoh	Farmer
18		Tenplis Nonglang	Farmer
19	EJH	Samuel Latam	Farmer
20	Ri Bhoi	Bravely Marvin Dhar	Farmer
21		Belte Shasar sylliang	Farmer
22	EKH	Salome Suchiang	District Project Manager, MegLife

FEEDBACK

<p>Name-Smt. Bi up Dhar Address-Mynska (Laskein Block), West Jaintia hills</p> <ol style="list-style-type: none"> 1.To know the benefit of having a machine and its used 2.To know the different type of species 3. To know the pattern of raising nursery for propagation 4.To know the propagation method for further multiplication 5.To know about the product that can be made from these species 6.Proper planting of Aromatic Plants and Horticulture crop 7.To know the proper spacing and pattern of planting of these medicinal and Aromatic plants 8.To know about the marketing strategy for proper channelization 	
<p>Name-Deimiki Lamare Address-Mynska (Laskein Block), West Jaintia hills</p> <ol style="list-style-type: none"> 1.To know about the Medicinal and Aromatic Plants (MAP) 2.To know the pattern of planting the MAP 3.To know the rooting pattern from the tree 4.To know the process of making FYM 5.To know about multiplication 	
<p>Name-Arkidaroi Sayoo Address-Khliehrangnah, (Laskein Block), West Jaintia hills</p> <p>Through this training we got benefit from knowing about different kinds of species of medicinal and Aromatic Plant and about the floriculture crop. From this training we hope to spread out the knowledge that we have acquired for the benefit of our whole community and village and to be able to propagate the planting material for further multiplication</p>	
<p>Name-Bina Sungoh Address-Khliehrangnah, (Laskein Block), West Jaintia hills</p> <ol style="list-style-type: none"> 1.To be able to propagate the planting material for further multiplication 2.Benefit of this training, we know about the High-Value Crop and all those new different species that can be introduce in our state 	

<p>Name-Wandakini Lapasam Address-Khlookynrin (Laskein Block), West Jaintia hills</p> <ol style="list-style-type: none"> 1.To be able to propagate the planting material for further multiplication 2. To know the pattern of planting the MAP for the purpose of distillation of Oil <p>Therefore, through this training we gain so much knowledge and hope to spread the knowledge for the benefit of the community</p>	
<p>Name-Karbina S Passah Address-Shangpung(Laskein Block), West Jaintia hills</p> <p>Through this training we get to know about skill development related to value addition and marketing linkage of aromatic plants and its industrially important. To know about the important crop that can be planted in Meghalaya and the medicinal crop that can be used for distillation of oil, The process of planting of mushroom and beekeeping and to know the pattern of propagation for multiplication.</p>	
<p>Name-Mitira Phyllei Address-Mynkrem (Laskein Block), West Jaintia hills</p> <p>From this training we get to know more about different types of species that can be planted and want to express the gratitude towards the Institute for providing us with the planting material.</p>	
<p>Name-Waimidashisha Wann Address-Shangpung Koira (Laskein Block), West Jaintia hills</p> <p>From this training, we get to know about skill development and the benefits of all the high value crop, the importance of technology of distillation Unit, the marketing linkage and the industrial usage of all the medicinal and Aromatic Plants. Awareness about the new different type of species related to plant that can be distilled, the process of beekeeping, the floriculture crop and the way to propagate the seedling for multiplication.</p>	

<p>Name-Besterly Marwein Address-Byrwa, (Umsning Block) Ri Bhoi District</p> <p>From this exposure trip, I got the benefit and into knowing more about <i>Tegethes minuta</i> and its important for seed collection, harvesting and trimming season. To know the important of <i>Damascus rose</i> and its propagation for raising a nursery for further multiplication to be able to do mass plantation, the way to give farm yard manure and for maintenance. Out of all the training, these are two of the important aspect that I put my focus on and I will try my best to obtain the result from it.</p>	
<p>Name-Policy Lyngdoh Sangriang Address-Mawthawpdah, (Mawkyrwat Block), South West Khasi Hills District</p> <p>I got so much benefit from this training and on top of that we got so much information about different type of species that can be used for marketing accordingly. I will try my best within my power to work hard to achieve the result and also, I will motivate my other mates to take up this plantation for the benefit of our community. One of the main drawbacks that I face as a farmer is the unavailability of the support at the beginning stage.</p>	
<p>Name-Jantison Nongsiej Address-Mawthawpdah, (Mawkyrwat Block), South West Khasi Hills District</p> <p>From this training I get to take the benefit of knowing more about the medicinal and Aromatic and its different species and its different usage when it comes to industrially benefit and value addition product and exposure to the distillation unit for distillation of oil. We get to visit to different type of field that are available in the institute and also to the farmers field were growing of <i>Damask rose</i> and <i>Tegethes minuta</i> flourished. From our farmer side, we will try our level best to promote the plantation in our village and community and we seek to get more help from the office side for further support.</p>	
<p>Name-Tenplis Nonglang Address-Mawsynrih, (Mawkyrwat Block), South West Khasi Hills District</p> <p>From this training, I have acquired the knowledge about the Aromatic and Medicinal Plants where the important of high value crop.I got more clarity about the different species and its importance. I will try my level best to do more multiplication for further plantation and expansion in an area of our community.</p>	

Name-Rosemilda Lyngdoh
Address-Rangmaw, (Mawkyrwat Block), South West Khasi Hills District

From this training ,I have acquired the knowledge about the medicinal Aromatic Plants(MAP)and its important usage when it comes to industrial and value added addition. I will try my best to implement this plantation for the benefit of the community.



Name-Samuel Latam
Address-Mynthlu, (Khliehriat Block), East Jaintia hills
From this training, as a farmer one of the benefits that I got is the knowledge and information about the medicinal and Aromatic Plants (MAP) and the way of propagation for further multiplication. The timing for planting and harvesting of the *Tegethes minuta* which is one of the crops that I am planting and I wish for further multiplication of it.



Name-Bravely Melvin Dhar
Address- Umdohbyrthi, Bhoirymbong Block, Ri-Bhoi district
From this training, I have acquired the knowledge about the aromatic plants and the important life cycle of these aromatic plants, the way it has been cultivated and harvesting for obtaining the benefit of essential Oil.



Name-Belte Shasar Sylliang
Address-Umdohbyrthi, Bhoirymbong Block, Ri-Bhoi district
From this training, as one of the farmer the knowledge I have acquired throughout this training is benefitting me in a multiple way the way of harvesting and planting of *Tegethes minuta* and *Damask rose* and as farmer I wish to do multiplication for further expansion.



<p>Name-Salome Suchiang Address-Shillong,East Khasi Hills district</p> <p>The overall training on skill development program on Agro and process technology, value addition and marketing of aromatic and industrially important crops for the farmers of Meghalaya conducted by CSIR-IHBT was very productive. I have learnt so many things during these 5days training where different crops like Marigold, Rose flowers, Lavender etc. can produce essential oil. Looking forward for many more trainings so that we will get better knowledge about Aromatic plants.</p>	
<p>Name-Diadema Irini Nongrum Address-Shillong,East Khasi Hills district</p> <p>As an Institute of Natural Resources (INR) field assistant, the knowledge I have gained from this training will have a significant practical impact on my ability to assist farmers in planting correctly and serve as a key to solving their problems. To help and guide the farmers in the field, one of the most important things I learned was about the life cycle and propagation methods of <i>Tegetes minuta</i> and <i>Damask rose</i>.</p>	
<p>Name : Rangdamon Dkhar Designation: BTA Office : Laskein C&RD Block Dist: West Jaintia Hills Dist , Meghalaya</p> <p>First and foremost I want to give thanks to All mighty for being with us throughout the journey. I want to extend my thanks to MINR through Dr Hygina Siangbood for giving me this opportunity to explore the practical knowledge and skills regarding Citronella, lemongrass cultivation and other Aromatic plants.</p> <p>Overall experience I find it excellent right from the hospitality, the food and accommodation. The training was fruitful I got a chance to witness it with my one eyes on how they do the processing unit for essential oil extraction. I even get some knowledge regarding <i>Tegethes minuta</i> cultivation and the scientific method of planting it the timing of cutting it and harvesting it , and I have learn a lots through the farm and field exposure with Damask rosé cultivation, Stevia and Monk fruits .</p> <p>The whole training and session are just excellent</p> <p>Suggestion: As I have the target to take up the <i>Tegetes minuta</i> plantation project through MGNREGA in convergence with MINR , I hope with the support of MINR we will be able to work it together in providing assistance in the form of seeding , scientific techniques and many more . And also i hope your good office (MINR) will helps our farmers in dealing with the marketing of the product generating from our Block . Thank you</p>	

<p style="text-align: center;">Name :: Tipki Suchiang Designation:: BTA Office :: Laskein C&RD Block Dist:: West Jaintia Hills Dist , Meghalaya</p> <p>First and foremost I want to give thanks to All mighty for being with us throughout the journey. I want to extend my thanks to MINR through Dr Hygina Siangbood for giving me this opportunity to explore the practical knowledge and skills regarding Citronella, lemongrass cultivation and other Aromatic plants.</p> <p>The whole training is fruitful and benefited and I hope to make used of this training and share my knowledge to my fellow farmers in order to take up the Aroma mission in the coming days. Overall, the training was excellent</p>	
<p style="text-align: center;">Name: Bhalang Kamar Designation: Block Technical Assistant (MGNREGA) Contact No:7005601937 Office: Laskein C & RD Block,Laskein West Jaintia Hills District. Meghalaya</p> <p>During the exposure trip, we jotted down that Crop diversification and inclusion of the new varieties can be one of the important technologies in increasing the farmers' income especially those who are not dependent on a single crop to generate their income.</p> <p>Besides land preparation, Plantation and value addition we also learned about design of agricultural structures for purposes of nursery raising and exclusively in connection with production.</p> <p>We believed that our objective was achieved & we learned something new and beneficial for our farmers. It was a well recommended trip for our farmers and especially for the MGNREGA Block Staff in order to help and support our local farmers through convergence project and also improve the social-Economic development of the Rural People.</p>	

BIORESOURCE TEAM
INSTITUTE OF NATURAL RESOURCES, MEGHALAYA
SHILLONG