

**BRAINSTORMING SESSION**  
**ON**  
**MEDICINAL**  
**AND**  
**AROMATIC**  
**PLANTS**

***On 26<sup>th</sup> Dec 2013***



**At Doon University, Dehradun**

**During 8<sup>th</sup> Uttarakhand State Science & Technology Congress**



**Uttarakhand State Council for Science & Technology**  
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# Introduction

Medicinal plants and Aromatic plants are in great demand due to their unique curative properties; it is one of the fastest growing sectors in the world. Plant derived medicines are comparatively cheaper and easily accessible. Growing demand for herbal products in the recent past has led to a quantum jump in volume of plant material traded globally. World Health Organisation (WHO) estimates that 80% of the human populations in the developing countries rely on traditional medicines, mostly plant drugs for their primary health care needs. In this sector India has a high growth rate (22%), which is much greater than the global average (7%). Recent years has observed a change in forest management approach in the tropics as greater emphasis has been laid to shift from timber production to biodiversity conservation by providing livelihood & income generation opportunities to local communities. The MAP sector has brought high hopes in this regard, thus opened up a new line of action on this sector. As more than 90% MAP species are sourced from wild because of high market demand, it has propelled tremendous pressure on these natural resources. Although efforts for conservation of medicinal plants in natural habitats and their sustainable exploitation has been practices in some areas, still a long way is to go for achieving sustainable development of this sector.





The Himalayas have a great wealth of medicinal plants and associated traditional knowledge on health care. The Indian Himalayan region alone supports over 18000 species of plants with nearly 45% considered to have medicinal properties. 700 plant species are documented for their medicinal practices; large numbers of them are used in Ayurvedic, Unani and other traditional systems of medicine. Many species also collected on commercial scale for use in drug & pharmaceutical industries. The state has made some significant strides for development of medicinal and aromatic plant (MAP) sector and the major developmental focus has been on to facilitate economic development of local communities by enhancing and modernizing production of medicinal plants; conserve natural heritage of the medicinal plants; safeguard local health traditions and knowledge on health care system; and to strengthen infrastructure, extension, market and R&D facilities for medicinal plant sector development. Selected species are totally banned for wild collection, whereas a few others can be collected on cyclic or regular basis. 26 species are prioritised for mass scale cultivation along with providing subsidy on them. It has also initiated registration of cultivators and simplified transit mechanism to market cultivated species. The Government further intends to exploit this sector for medicinal, aromatic and nutraceutical purposes. It plans to strengthen commercial cultivation of market-demanding rare and important MAP species, bio-prospecting of other potential ones, and conservation of rare & threatened species. This highlights the need to advance debate on the topic by involving academicians, scientists, practitioners, farmers and other resource-personnel to further strengthen MAP sector for best interest of the state.

Considering the importance of MAPs under the auspices of 8th USSTC, 2014, UCOST has taken an initiative to organize a Brainstorming Session on “Medicinal and Aromatic Plant sector in Uttarakhand State”.



# Objectives

A half day brain storming meeting was organized by Uttarakhand Council of Science and Technology under the chairmanship of Padamshree Prof. A.N. Purohit. The major aim of the brain storming was to optimize the benefits from medicinal and aromatic plants to the people in the region. The specific objectives of the meeting were to (i) conserve wild diversity of MAP species and traditional knowledge on local health care systems; (ii) strengthen conservation and develop market linkages for promotion of MAP sector in the state; (iii) strengthen institutional linkages and collaborative approaches for quality control, post harvest management, value addition and future research need in MAP sector; and (iv) facilitate the development of state of Uttarakhand as a potential herbal destination.



# Discussion

At the outset, Prof. A.N. Purohit welcomed all the participants and briefed on the importance and potential of medicinal and aromatic plants. He briefly described the possibilities of taking advantage of MAP in the state by way of promoting its conservation as well as sustainable use. He stated that perception of people on MAP is slightly changing and therefore, rather focusing only on medicinal value, research should be focus on nutraceuticals (Health food); pharmaceuticals (medicines) and cosmoceuticals (cosmetics). He also highlighted that every aromatic plants have medicinal properties but every medicinal plant is not aromatic. Therefore, research programme should be species specific. Citing the example of garlic, he mentioned that if utility of plants is much more, farmers will cultivate themselves and there will no problem in marketing.

This was followed by two lead lectures on “Conservation and sustained growth of medicinal plants sector in Uttarakhand state” by Dr. Sarvepalli Badri Narayan, Dabur India Ltd. and “Aromatic – Medicinal plants reserves of Uttarakhand: Myth and reality” by Prof. C.S. Mathela. Both the speakers stressed on the need of in-depth research on the MAPs to harness its potential in right perspectives. The lead lectures were followed by group discussion among the experts of different institutions and industries from Delhi University, G. B. Pant Institute, CIMAP, NBRI, HAPPRC, CAP, SMPB, IMPCL, Dabur and Glycol India and following recommendations were emerged for action on the part of the State Government and the UCOST:



# Recommendations

## **A. Role of the State Government:**

1. While discussing the research, it was unanimously felt that there is a need of more focussed and integrated research in diverse aspects to harness the potential of MAPs.
2. Prioritization of MAPs for research has however available but further prioritization based on availability, accessibility and adaptability is needed. However, care should be taken of both conservation as well as commercial aspects of the prioritized species.
3. Quality planting material is one of the major problems for initiating large scale cultivation; therefore, high tech nurseries should be established at different region, which can produce quality planting material of different species through conventional as well as in vitro methods.
4. Promote 'Aromatic-Medicinal Plants based Industries': Established private industries and economically viable Cluster Level Approach for cultivation and processing may be adopted and crops belonging to the following categories be identified and cultivated on large scale as per needs of the industries:
  - (a) Essential oil production
  - (b) Herbal extracts / Attar / Pharmaceutical preparation, and
  - (c) Neutraceutical preparations.
5. Industries may utilize the materials like flowers of Rhododendron, the flowers which are under-utilized at the present. Seabuckthorn is still a promising material for pharmaceutical and neutraceutical preparations. It is a high value material globally accepted and is in demand, and its production is suited to our climatic conditions.
6. Creation of Herbal Markets/ Herbal Mega marts and Development Centres which may have:
  - (a) Quality assessment/ standardization/ certification labs./ facilities.



- (b) Grading, sorting and packaging facilities.
  - (c) Establishing strong national and international marketing networking.
  - (d) The local farmers/ growers be involved with buy back assurance at remunerative prices of their produce (Dabur model is suitable for this purpose). Villagers of remote high altitude/ border areas are willing to take up cultivation if buy back system is guaranteed
7. Since the state is known for its rich MAP diversity therefore, there is need to develop grid MAP based availability status and regeneration patterns of each species or important species so as quantification of wild stock and future existence of the species in the state can be determined.
  8. Establishment of national accreditation laboratories in different regions is required for assessment of planting material and produce.
  9. Land is one of the issues for initiating cultivation of MAPs, therefore, this should be linked with the different forestry programmes where plantation of medicinal plants can be done at forest/ Van Panchayat land.
  10. Since location specific variation in MAPs is prevalent, therefore, multi-location collection for phytochemical and genetic assessment is required and species with better performance should be multiplied for cultivation purpose.
  11. Awareness is one major hurdle in promoting conservation and cultivation, therefore, adequate awareness programmes, skill development and exposure visits of farmers is needed.
  12. Ayurvedic medicines are an integral part of most of the people of the state, therefore, clinical standardization of such medicine/drugs should be carried out scientifically.



13. Lower group of plants are generally neglected in this sector in spite of their huge diversity and potential, therefore, this group should be promoted to strengthen the MAP sector in the state.

14. Linkage with Tourism Sector :

- (a) Creating 'High Altitude Herbal Gardens' for tourists
- (b) Display of herbal materials/ semi processed/ final herbal products
- (c) Conducted tours to Natural Habitat of herbs.

## **B. Role of UCOST:**

It was unanimously resolved that there is need of integrated research on different aspects of MAPs to harness its potential. The UCOST has an important role of co-ordinating with different Research Institutions, Universities, Medicinal Plant Board Institutions and Medicinal Plants growers. It may promote application oriented research on the following lines:

1. Researches on chemical screening of aromatic-medicinal plants of this region, specially those with immediate commercial potential. Focus may be on identifying and introducing high grade materials/ species/ sub-species/ chemotypes. Research Centres/ Individuals for taking up such work may be identified and supported by UCOST, MPB and other agencies.
2. Resolve specific problems of herbal farmers in relation to newer methods of extraction, quality control, toxicity-pesticide residue evaluation.
3. Encourage research on genetic improvement for high yielding species, particularly those of the high altitude areas.
4. Human Resource development on MAPs
5. Co-ordinate link among farmers, government and scientists.





## MEDICINAL AND AROMATIC PLANTS

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