

**Academic Year 2022-23**

**2.5**

**National Hunger**

**2.5.3 University Access to Local farmers and food Producers**

**MRIIRS Weblink to SDG 2:**

<https://mriirs.edu.in/sdg02-zero-hunger/>

### 2.5.3 University Access to Local farmers and food Producers

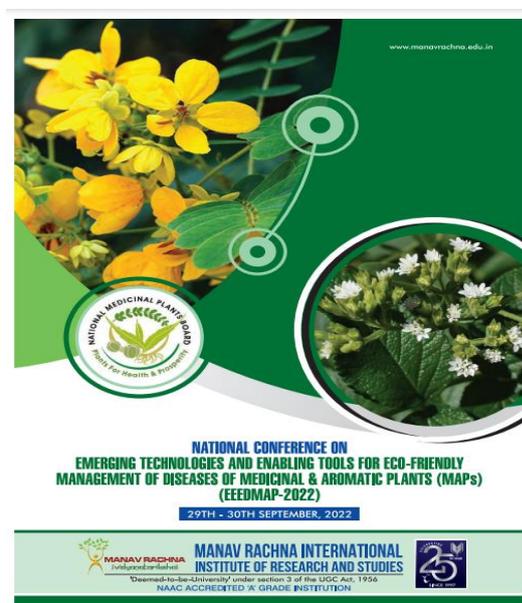
Small-scale farmers with sophisticated agro-ecological knowledge, technologies, and practises can significantly contribute to the achievement of SDG 2 by identifying and classifying resources, types, and breeds. It is essential to establish fair partnerships between pastoral and agricultural communities, the institutional plant science sector, and seed banks. Depending on their own needs, small-scale farmers and their communities are likely to give different resources a higher priority. **MRIIRS provides farmers with a place to interact with and ask questions of experts in the domains of agriculture and nutrition through conferences, seminars, through Dr. O. P. Bhalla Foundation (an ISR arm of MRIIRS) and outreach awareness sessions & assistance.**

#### 1. National Conference On "Emerging Technologies and Enabling Tools For Eco-Friendly Management Of Diseases In Medicinal & Aromatic Plants" (EEEDMAP 2022): Access to food security/ sustainable agriculture

Department of Biotechnology and MR Centre For Medicinal Plant Pathology (MR-CMPP) FET, Manav Rachna International Institute of Research and Studies organized a two-day National Conference on "**Emerging Technologies and Enabling Tools for Eco-Friendly Management of Diseases in Medicinal & Aromatic Plants**" (EEEDMAP 2022) which was supported by the National Medicinal Plants Board (NMPB), Ministry of AYUSH, Government of India (GOI). **The conference was attended by students, faculty members, local farmers** and participants from all over India, viz CSIR-NIScPR, Pusa, University of Patanjali, Haridwar, University of Delhi, Delhi, Banasthali Vidhyapeeth, Madurai Kamraj University, Tamil Nadu, JNV University, Jodhpur, UPES, Dehradun, MIT, Pune, JP Institute of Technology, Noida, JECRC University, Jaipur, Shoolini University, Solan, HP, Banaras Hindu University, Banaras, GGSIP University, Delhi, and MDU, Rohtak.

The inaugural session was graced by the Chief Guest Dr. Chandrashekhar Sanwal, Deputy CEO, IFS, NMPB, Ministry of AYUSH, GOI. The ceremony also witnessed the presence of Hon'ble Keynote Speaker, Prof. P.C. Trivedi, Former Vice Chancellor- 5 Universities; Dr Sanjay Srivastava, Vice Chancellor, MRIIRS; Dr. Pradeep Kumar, Pro-

Vice Chancellor and Dean, Faculty of Engineering and Technology; Mr. R. K Arora, Registrar MRIIRS. Prof. (Dr.) Nidhi Didwania , Convener, highlighted the objective of the conference "Health of Healthy Plants".



#### SCOPE OF THE CONFERENCE

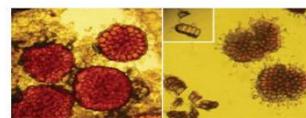
According to the Botanical Survey of India, India is home to more than 8,000 species of medicinal plants. The country has a rich history of traditional healing systems, many of which list the use of these plants. According to the WHO, at least 25% of all modern medicines are derived, either directly or indirectly, from medicinal plants. The Indian forests are the principal repositories of large number of medicinal and aromatic plants, from where the raw materials are collected predominantly for manufacture of drugs and perfumery products.

As one of the measures to conserve the precious species, commercial cultivation began which inadvertently brought the problem of pests and diseases leading to crop loss of various magnitudes. Also, too much emphasis has been put on the potential for discovering new wonder drugs, and ignore on the insurmountable problems associated with the already known and cultivated MAPs. Medicinal plants are vulnerable to be attacked by several pathogens resulting crop loss in terms of both quantity as well as quality. Pests and diseases are also a great problem of medicinal plants where toxins are produced by the pathogens. These plant diseases create challenging problems in commercial agriculture and pose real economic threats. Therefore, the "health of these healthy plants" should be concerned. Medicinal plants being used in health-care system and chemical methods of management of pests and diseases are becoming obsolete. It is a must that non-chemical, eco-friendly safer methods of management are essential. Preparedness for combating against the biotic stresses of medicinal plants is prerequisite for horizontal

expansion of medicinal plants acreage in future. The medicinal plants need to be conserved effectively for the future and the time is right to utilize the global demand for Indian Medicinal plants and their bioactive metabolites by sustainable production of healthy and diseases free quality plant material through emerging technologies, biopesticides & biotechnological tools. The proposed conference will provide a platform to discuss and provide a framework for the conservation and sustainable use of plants in medicine.

The conference aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on different aspects of Medicinal and Aromatic Plants. This will not only enlighten the young scientist, faculty, students, researchers, conservationists, academicians from different disciplines viz. Biological Sciences, Biotechnology, Ayurveda, Pharma & Medicine, Alternative medicine etc. about the supreme importance of Medicinal & Aromatic Plants but also will open their mind for the research work to be carried out in this highly potential field. It also provides a

premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields against major pathogens of Medicinal and Aromatic Plants. We hope to make this national gathering on medicinal and aromatic plants particularly educational and inspiring for young scientists who will get an opportunity to interact with leading experts.



Prof. P.C. Trivedi gave an insight about the phytodiversity and talked about the Eco-Friendly Management of Diseases of Medicinal & Aromatic Plants. This was followed by two sessions which were conducted by Dr. A N Shukla, Scientist E, Biodiversity Division of the Ministry of Environment, Forest and Climate Change (MoEF & CC), New Delhi; Dr. Jeetendra Kumar Vaishya, Research Officer (Medicinal Plants / Agronomy), National Medicinal Plants Board, Ministry of AYUSH, Government of India, Mr. Sameer Kant Ahuja, Chief Manager, Regulatory Multani Pharmaceuticals Ltd. and Mrs. Reeva Sood, Director, Tanishka Herbs.

**On the second day, the progressive farmers from Faridabad & Palwal, Mr. Bijendra Singh Dalal & team participated in the conference with full enthusiasm** and were interested in cultivation of Medicinal Plants with the support of MR-CMPP, MRIIRS and NMPB. This was followed by a lecture session (invited talk) by Eminent Scientist, Professor N K Dubey, Head, Department of Botany, Faculty of Science, Banaras Hindu University, Varanasi. He delivered an exceptional talk in which he emphasized the importance of botanical pesticides with reference to the origin of

mycotoxin and how nature had played the role of doctor in the absence of advancement in the past.

Following this Dr. A. A. Ansari, Former Scientist E, Botanical Survey of India (BSI), famously known as the “Crotolaria Man”, delivered a detailed overview on plant pathogens on different species of medicinal plants.

Dr. Jeetendra Vaishya, National Medicinal Plants Board (NMPB) highlighted the following recommendations made by the participants: Strategies should be in place for the post-harvest management of the medicinal plant produce; Need of inventorization and taxonomic identification of biodiversity in the Aravalli ranges for conservation of Medicinal Plants; and Special attention is to be made to the utilization of resources (agro-economics) whereby farmers should be made aware of the expensive medicinal plants so that they may expand their cultivation.

NMPB supported the recommendations and agreed to extend full support for carrying out research and extension activities in the newly established Manav Rachna Centre for Medicinal Plant Pathology (MR-CMPP). The proposed conference provided a platform to discuss and provide a framework for the conservation and sustainable use of Medicinal & Aromatic plants.





**Participation of farmers and agricultural experts in National Conference**



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Faridabad NCR Haryana Hindutan ab tak special

मानव रचना ने “औषधीय और सुगंधित पौधों में रोगों के इको-फ्रेंडली प्रबंधन के लिए इमर्जिंग टेक्नोलॉजीज एंड इनेबलिंग टूल्स” पर राष्ट्रीय सम्मेलन का किया आयोजन

By **Dinesh Bhardwaj** - October 3, 2022

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**Faridabad Hindustan ab tak/Dinesh Bhardwaj** : 3 अक्टूबर। डिपार्टमेंट ऑफ बायोटेक्नोलॉजी एंड एमआर सेंटर फॉर मेडिसिनल प्लांट पैथोलॉजी (एमआर – सीएमपीपी), फैकल्टी ऑफ इंजीनियरिंग एंड टेक्नोलॉजी, मानव रचना इंटरनेशनल

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## मानव रचना ने “औषधीय और सुगंधित पौधों में रोगों के इको-फ्रेंडली प्रबंधन के लिए इमर्जिंग टेक्नोलॉजीज एंड इनेबलिंग टूल्स” पर राष्ट्रीय सम्मेलन का आयोजन किया

By Spbharat — On Oct 3, 2022



<https://manavrachna.edu.in/paryavaran/2020/02/01/international-conference-on-environmental-challenges-and-solutions-receives-enthusiastic-participation-from-thousands/>

## 2. **Distribution of Hybrid Bajra Seeds to Local Farmers at Pali, Faridabad on 23<sup>rd</sup> May 2023 at Pali and Mohtabad Villages, Faridabad**

The distribution of hybrid bajra seeds to local farmers in Pali, Faridabad, was a successful event that aimed to enhance agricultural productivity and promote sustainable farming practices. The positive feedback received from the participating farmers indicates the potential for increased yields and improved livelihoods in the region. However, it is essential to address the challenges faced and continuously support farmers in adopting modern agricultural techniques.

*Organized By:* MRCMPP & MRCAWTM, MRIIRS

1. The distribution event was held on *23<sup>rd</sup> May 2023* in Pali and Mohtabad villages, Faridabad. The choice of the venue ensured accessibility for a large number of local farmers.
2. The event saw the participation of approximately 100 local farmers from the Pali region, along with MRCMPP & MRCAWTM team members and volunteers. (Dr. Nidhi Didwania, Dr. A Mukherjee, Ms. Sneha Rai and Atal Bhujal Yojna team)
3. **Objectives:** The primary objectives of the distribution event were:
  - To provide local farmers with high-quality hybrid bajra seeds.
  - To educate farmers on the benefits of hybrid seeds in terms of yield and disease resistance.
  - To promote sustainable agricultural practices and crop diversification.
4. **Distribution Process:** The distribution process was well-organized and followed these steps:
  - **Registration:** Farmers were registered upon arrival, and their details were recorded for future reference.
  - **Seed Distribution:** Each registered farmer received a specified quantity of hybrid bajra seeds based on their landholding and requirements.

- Training and Information: Before the distribution, an informative session was conducted to educate farmers about the advantages of hybrid seeds, proper planting techniques, and crop management practices.
- Q&A Session: A question-and-answer session followed the training to address any queries and concerns from the farmers.

### **Seed Distribution Statistics:**

- Total number of farmers who received seeds: [Total Number of Beneficiary Farmers]
- Total quantity of hybrid bajra seeds distributed: [Total Quantity in kg or bags]
- Average landholding per farmer: [Average Landholding in acres/hectares]
- Quantity of seeds distributed per farmer: [Quantity per Farmer in kg or bags]

### **Feedback and Impact:**

Feedback from the participating farmers was overwhelmingly positive. They expressed appreciation for the initiative and the valuable knowledge shared during the training session. Farmers were enthusiastic about implementing the best practices discussed and expected higher yields in the upcoming harvest season.

### **Conclusion:**

The distribution of hybrid bajra seeds to local farmers in Pali, Faridabad, was a successful event that aimed to enhance agricultural productivity and promote sustainable farming practices. The positive feedback received from the participating farmers indicates the potential for increased yields and improved livelihoods in the region. However, it is essential to address the challenges faced and continuously support farmers in adopting modern agricultural techniques.

This report serves as a record of the distribution event's activities and outcomes and will be valuable for planning future agricultural initiatives in the region.

SDG- 2 ZERO HUNGER



23-May-2023 12:45:16 pm  
Pali Village Faridabad Division Haryana



### 3. Field visit for disease identification and management in tomato at Aurangabad, Palwal on 19<sup>th</sup> January 2023

A field visit was conducted on 19 January, 2023, in Aurangabad, Palwal, with the primary objective of identifying and managing diseases in tomato crops. The visit aimed to assess the prevailing disease situation in tomato fields and provide recommendations for effective disease management to improve crop yield and quality.

#### Participants:

- Local Farmers and Tomato Growers

#### Field Observations:

1. **Location and Climate:** Aurangabad, Palwal, is characterized by a subtropical climate, which is conducive to tomato cultivation. The region has experienced

consistent rainfall in the past few weeks, creating favorable conditions for diseases.

2. **Crop Stage:** The tomato crops observed during the field visit were in various growth stages, from seedlings to mature fruit-bearing plants.

3. **Disease Symptoms:**

- **Early Blight (*Alternaria solani*):** Early blight symptoms were prevalent, characterized by circular brown lesions with dark concentric rings on the lower leaves of the tomato plants.
- **Late Blight (*Phytophthora infestans*):** Symptoms of late blight, including water-soaked lesions on leaves, stem, and fruits, were observed in some fields.
- **Bacterial Spot (*Xanthomonas campestris pv. vesicatoria*):** Bacterial spot symptoms included small, dark, raised lesions with a water-soaked appearance on leaves and fruits.
- **Tomato Yellow Leaf Curl Virus (TYLCV):** Some plants exhibited symptoms of TYLCV, including yellowing and curling of leaves.

4. **Cultural Practices:**

- Crop rotation was not consistently practiced, contributing to disease build up in some fields.
- Limited spacing between plants was observed, leading to poor air circulation and increased disease pressure.

### **Recommendations:**

1. **Biofungicide and Bactericide Application:** Farmers should apply appropriate biofungicides and bactericides following recommended dosage and schedules to manage early blight, late blight, and bacterial spot. Consultation with MRCMPP is advised for product selection and application guidelines.

2. **Sanitation:** Remove and destroy infected plant debris to reduce disease inoculum. Proper sanitation practices can help minimize disease spread.
3. **Crop Rotation:** Encourage farmers to practice crop rotation to break disease cycles. Avoid planting tomatoes in the same field consecutively.
4. **Spacing:** Maintain adequate spacing between tomato plants to ensure better air circulation and reduce humidity, which can minimize disease incidence.
5. **Virus Management:** For TYLCV, control the vector (whiteflies) through bioinsecticide applications and the use of reflective mulch. Resistant tomato varieties may also be considered.
6. **Training and Awareness:** Conduct training sessions for local farmers on disease identification, prevention, and management practices to enhance their knowledge and skills.
7. **Regular Monitoring:** Farmers should regularly monitor their fields for disease symptoms and take timely action to prevent disease outbreaks.

**Conclusion:** The field visit to Aurangabad, Palwal, highlighted the presence of several tomato diseases, including early blight, late blight, bacterial spot, and TYLCV. Effective disease management strategies, such as timely application of fungicides and bactericides, crop rotation, proper spacing, and sanitation, are essential to mitigate the impact of these diseases on tomato crops. Furthermore, farmer education and awareness programs are crucial for long-term disease management and sustainable tomato cultivation in the region.





#### **4. Good Agriculture Practices of Voluntary Certification Scheme for Medicinal Plant Produce**

Manav Rachna Centre For Medicinal Plant Pathology (MRCMPP), Department of Biotechnology, MRIIRS jointly with Quality Council of India (QCI) organised One-day GAP training workshop on Voluntary Certification Scheme for Medicinal Plants produce (VCSMPP) for farmers on 19 November 2022. Medicinal plants, being the raw material for AYUSH medicines, account for around 90% of AYUSH formulations, which practically implies that the sustainability of the AYUSH traditional medicinal system is based on the degree of care with which medicinal plants are handled. Medicinal plants are at the core of providing livelihood and health security to a large segment of the Indian population associated with the traditional medicine and herbal industry.

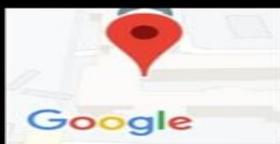
A total of 43 progressive farmers from Faridabad, Palwal, and Gurugram districts of Haryana either growing Medicinal Plants or interested to start Medicinal Plants cultivation participated in the workshop with full enthusiasm. The farmers were encouraged to form a Farmer Producer Organization (FPO). The inaugural session was

followed by technical sessions from the experts of QCI, MRCMPP and MRCAWTM. The farmers were sensitized regarding Good Agricultural practices, Post-harvest conservation and improvement of quality of Medicinal Plant Produce, Management of diseases caused by fungi, bacteria & viruses in Medicinal Plants & Voluntary Certification Scheme for Medicinal Plant Produce through capacity building. QCI invited the farmers (FPO) for free certification of demo plots of Medicinal plants which can help farmers to have better opportunities in the market and help increase their income. Shri Mahaveer Malik also shared his experience of selecting the sustainable spp. of Medicinal Plants for agro-climatic zone of Haryana.

Progressive farmer Shri Bijendra Singh Dalal & team highly appreciated the efforts by MR-CMPP, Manav Rachna International Institute of Research & Studies in providing a platform to farmers to discuss about good agricultural practices of Medicinal Plants and solving their queries.



SDG- 2 ZERO HUNGER



Block-A, F72M+CFW, Suraj Kund Badkhal Rd, Gadakhor Basti Village, Rocky Area, 19 Nov 2022 11:04 AM

broken clouds 21.0 °C





### **5. Manav Rachna Centre for Medicinal Plant Pathology (MR-CMPP)**

Quality Council of India (QCI) (established by the Government of India) shown interest with Manav Rachna Centre For Medicinal Plant Pathology (MR-CMPP) for sponsored collaborative research under Voluntary Certification Scheme for Medicinal Plant Produce (VCSMPP). This also has a reference from the State Medicinal Plants Board (SMPB), Haryana.

They intend to have a partnership comprising the following 4 aspects:

1. Experts to develop packages of practices for cultivation and collection of the various medicinal plant species
2. Certification of Demo Plots (Group certification) for medicinal plants growers, collectors, and areas.

3. **Training and sensitization workshops for producers**, consumers, Government Departments, State Forest Department officers etc.

4. One day Training program (Workshop) on GAP or GFCP of Medicinal Plants

Under this collaboration a capacity building cum sensitization training under the Voluntary Certification Scheme for Medicinal Plant Produce (VCSMPP) is scheduled in Manav Rachna International Institute of Research and Studies on 19th November 2022. One (1) day training program (Workshop) on GAP or GFCP for Medicinal Plant and caters to 50 farmers (majorly) from NCR Haryana.

<https://manavrachna.edu.in/manav-rachna-centre-for-medicinal-plant-pathology/>