

Academic Year 2022-23

2.5

National Hunger

2.5.2 Events for Local farmers and food Producers

MRIIRS Weblink to SDG 2:

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

2.5.2 Events for Local farmers and food Producers

By recognising and categorising resources, types, and breeds, small-scale farmers with advanced agro-ecological knowledge, innovations, and practises can make a significant contribution to the success of SDG 2. Establishing equitable collaborations between pastoral and farming communities and the institutional plant science industry, including seed banks, is necessary. Small-scale farmers and their communities are likely to prioritise different resources depending on their personal needs. Through conferences and seminars, MRIIRS gives farmers a forum to meet with and ask questions of specialists in the fields of agriculture and nutrition.

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”.



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 Herbals.

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



Home - Faridabad NCR

Faridabad NCR | Haryana | Hindustan 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, 2023

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



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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 23rd 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 *23rd 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.

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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 19th 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.



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

broken clouds 21.0 °C



Manav Rachna International Institute of Research and Studies, Faridabad



5. FDP on Organic Farming and Food Marketing

A Five days' faculty development program on "Organic Farming and Food Marketing" in association with NITTR, Chandigarh was organized by Department of Biotechnology, Faculty of Engineering & Technology, MRIIRS from 25-29 July, 2022. The target audience for the FDP were faculty members of MRIIRS. **The aim of the FDP was to provide opportunities to educate the young as well as senior faculty members about the Organic Farming so that further they can impart the knowledge to the farmers through awareness sessions.** The week-long FDP covered various topics and challenges related to Organic Farming. The FDP started with a discussion on the history of farming where Rishi farming, traditional farming (using cow dung/compost), natural farming (proposed by Masanobu Fukuoka). Natural farming (one straw revolution) was highlighted, which was based on four principles which were no tillage, no fertilizers, no weeding and no chemicals.

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Permaculture Ethics & Principles

Central Principle: **Earth Care, People Care, Fair Share**

Surrounding Principles:

- Observe & Interact
- Use Edge & Value
- Use & Value Diversity
- Use Small & Slow Solutions
- Integrate Rather Than Separate
- Produce No Waste
- Use and Reuse Energy
- Design A Yield
- Apply Self-Regulation & Accept Feedback
- Use and Value Renewable Resources & Services
- Respond to Change
- Report To Change



Organic Food Market in World

The global organic food and beverage market has been valued at a projected value of \$200 billion in 2020, with a CAGR of 14.2% from 2020 to 2027. The rise in awareness regarding the health among consumers and the various health benefits of organic food and beverages have encouraged the growth of the global organic food and beverage market.

The COVID-19 pandemic has significantly boosted the growth of the global organic food and beverage market. According to the Organic Trade Association, the U.S. witnessed an all-time high sales of organic food and beverage items in 2020. The organic sales in the U.S. were reported at \$41.8 billion in 2020. The organic food witnessed a growth of 7.0% and the sales reached \$36.2 billion in 2020. The increase in health-consciousness among the rise in focus of consumers towards healthy food intake during the pandemic to improve their immunity and get health inspired the demand for the organic food and beverages in the market.

Organic Food and Beverage Market

By Product Type

Product Type	2020	2021
Organic Beverages	~10%	~12%
Organic Snacks	~15%	~18%
Organic Dairy	~20%	~22%
Organic Grains	~18%	~20%
Organic Produce	~35%	~38%

Organic Coffee and Tea segment held the major share of 22.0% in 2020.

<https://www.alliedmarketresearch.com/organic-food-beverage-market>

6. 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/>

7. Manav Rachna Start-up Initiatives for Sustainable Agriculture And Support Farmers



TRICHO AGRONICA PVT. LTD

Lab to Land: An eco-friendly approach



FIELD TRIALS IN 4 AGRO-CLIMATIC ZONES



RECOMENDATIONS

SKUAST, Srinagar: Foliar spray with oil bioformulation at 1×10^5 CFU can replace 75% chemical in controlling Septoria leaf spot, Cercospora leaf spot, early blight, late blight, buckeye fruit rot and Alternaria fruit rot disease and also increase the yield of 25.22%.

UHS, Bengaluru: Spray with oil bioformulation at 1×10^5 CFU can replace 50% chemical in reducing the intensity of early and late blight disease of tomato and also increase the yield of 97.47%.

IARI, Delhi: Oil bioformulation at 1×10^5 CFU was effective against fungal and bacterial diseases and enhance early flowering and fruiting in the tomato plant at lower doses like 4 and 6 ml per liter twice in one crop season.

MRIIRS Campus, Sector-43, Aravali Hills
Faridabad - 121004 (Haryana) INDIA Phone: 0129-4198293

<https://manavrachna.edu.in/newgeniedc/ongoing-startups/#:~:text=Tricho%20Agronica%20Pvt.&text=Tricho%20Agronica%20Pvt%20Ltd%2C%20the,to%20Land%2D%20an%20eco%20friendly%20approach>

<https://www.educationworld.in/mriu-incubated-start-up-tricho-agronica-receives-rs-172-cr-grant-from-indian-oil/>



M/s Tricho Agronica Pvt. Ltd

In the recent years there has been a heart warming paradigm shift of demographics in the Indian corporate landscape and the country has witnessed a titanic surge in the number of women entering the economic wave. M/s Tricho Agronica Pvt Ltd, Department of Biotechnology, Faculty of Engineering & Technology, MRIIRS is the Start-Up company have all women team members as stake holders. The Start-Up has received a grant of Rs 172 lacs under Indian Oil Startup Scheme (IOSUS), a "Start-up India" initiative that aims to support innovative ideas that have significant business potential, social relevance and/or are focused on environment protection. Further, such validated PoCs may be supported for commercialization through equity participation. The vision of the company is to provide Lab to Land- an eco-friendly approach. It aims to promote, develop and provide eco friendly products and technologies in safer, cost effective and sustainable manner. The mission of the company involves an eco friendly approach for sustainable agriculture understanding the nature of market, farmer"s aspirations and providing appropriate solution to them through organic farming keeping in mind the environment and health issues. Injudicious and long period utilization of synthetic agrochemicals in agriculture has led to toxic pesticide residues, appearance of pests, resistance and resurgence,

environmental contaminations, negative impacts on human health and non-target organisms thus, leading to pernicious effects on food chain of the ecosystem. This has forced the researchers and pesticide industries to shift their focus to more reliable, sustainable and eco-friendly products. Bio formulations are a potential alternative to currently used agrochemicals and the need of the hour. The global biopesticides market was worth US\$3.3 billion in 2017 and the opportunity in the market is projected to surge to a valuation of US\$9.5 billion by 2025. The market is anticipated to rise at an impressive CAGR of 13.9% during the forecast period 2017–2025. Keeping these perspectives in view the company has designed its first bio formulation product „Bio elixir“ which is a remedy for bull’s eye pathogen at low cost. The synergistic effect of the bio elixir constituents has the capability to increase systemic resistance in plants by increasing photosynthesis process in plants. It is the bio fertilizer and a bio fungicide organic formulation which is available in the powder form. It is a non-chemical based formulation to reduce disease of tomato plant combining with features for enhancing soil structure and fertility, maintaining soil biological activities and promoting plant growth & biomass. The farmers will be highly benefited as it is very effective against those *Alternaria* isolates which has developed resistance against chemical fungicides. This will not only promote biodynamic agriculture but will also encourage eco-friendly sustainable lifestyle. M/s Tricho Agronica Pvt. Ltd. stands in spirit to this endeavor and is also committed for consolidating efforts towards improving crop productivity leading to food security with enhanced organic footprints.



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Crop Cycle



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Crop cycle at BCKV, Kalyani



Crop cycle at SKUAST, Srinagar

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Appreciation given by Sh. Atul Kothari, Secretary, Shiksha Sanskriti Uttan Nyas, New Delhi and Sh. Subodh Bishnoi Ji, S K Rajasthan Agricultural University, Agriculture Research Station, Ganganagar



Exhibited Tricho Agronica Pvt. Ltd. at IASE University (Institute of Advanced Studies in Education) in Sadar Sahar, Rajasthan.