



ICAR Sponsored Short course

on

Role, Importance and Techniques of Beneficial Phyto-microbiome in Sustainable Agriculture

27th January to 5th February, 2025

Organized by

**Vasantrao Naik Marathwada Krishi Vidyapeeth
Parbhani, Maharashtra - 431402**



Course Director

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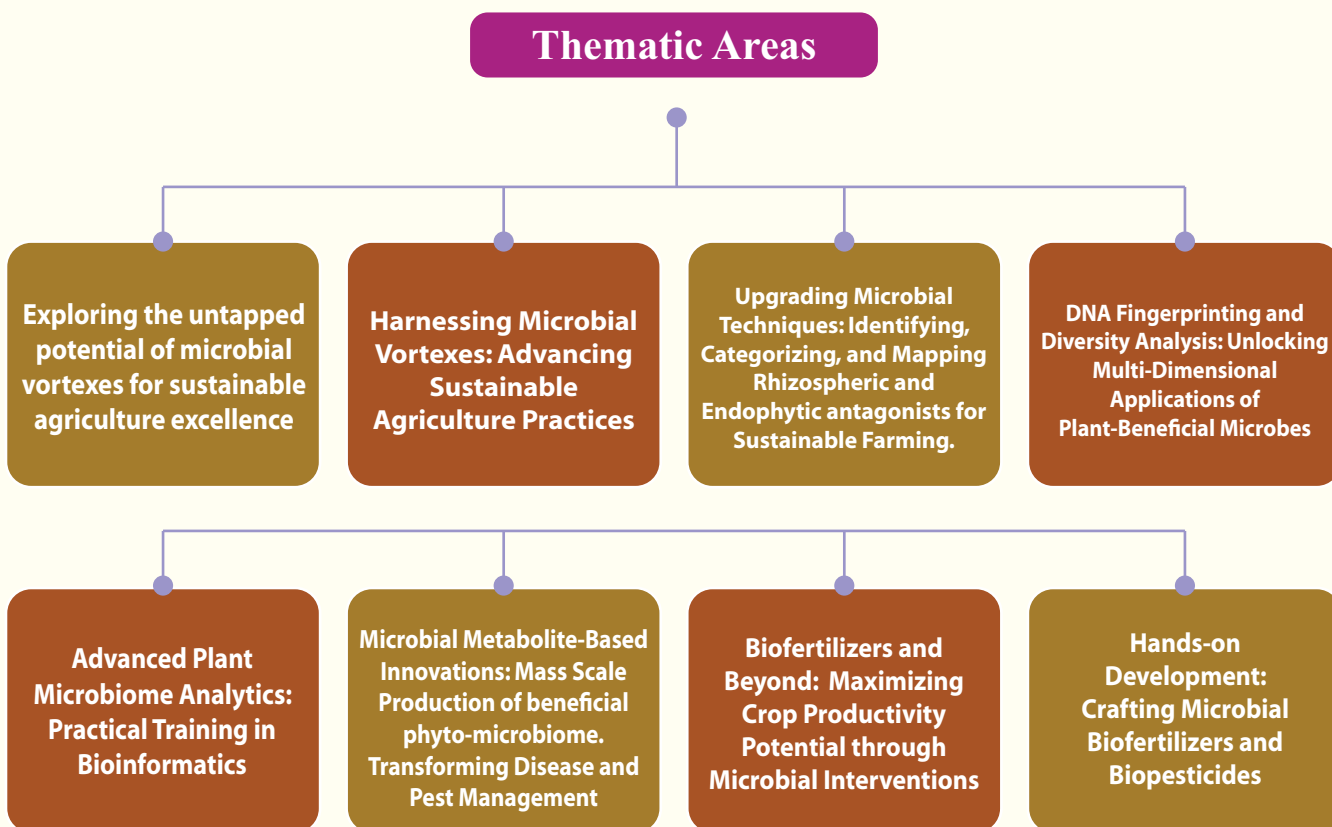
Sponsored by

**Agricultural Education Division (HRD)
Indian Council of Agricultural Research (ICAR), New Delhi-110001**



About Short course

The proposed short course aims to provide comprehensive insights into the role, importance, and techniques of beneficial Phyto-microbiome in sustainable agriculture. The microbial communities in plants enhance plant growth, nutrient uptake, stress tolerance, and disease resistance. This well-structured short course aims to disseminate up-to-date knowledge on beneficial phyto-microbiome. This will also provide opportunities to experience state-of-the-art facilities of VNMKV through hands-on training to enable the participants to leverage phyto-microbiome sustainable agricultural practices. The beneficial phyto-microbiome mediated plant health care which would address the isolation, identification, multi omics-based characterization of plant beneficial microbes and application of their different formulations to facilitate sustainable agriculture. This short course will also inspire the young researchers for the development activities to unlock the potential of phyto-microbiome in sustainable agriculture.



Eligibility and participation

Applicant should be postgraduate in Plant Pathology/ Microbiology/ Soil science/ Agricultural Entomology/ Plant Protection working not below the rank of Assistant Professor/ SMS or equivalent from ICAR institute, SAUs, CAUs, KVKs, Agriculture Faculty of AMU, BHU, Viswa-Bharati and Nagaland University.



About VNMKV

Vasantrao Naik Marathwada Krishi Vidyapeeth (VNMKV), located in Parbhani, Maharashtra, and established on May 18, 1972, is a premier Agricultural University dedicated to advancing education, research, and technology dissemination in the Marathwada region. Under the visionary leadership of Hon. Vice-Chancellor Dr. Indra Mani, VNMKV has achieved remarkable milestones. Recognized for its excellence, the university has been honored with the prestigious International Green University Award in 2023. The VNMKV has also received several other accolades, including the Best AICRP Research Centre Awards for its outstanding work on oilseeds, safflower, cotton and pearl millet, as well as the Jaivik India Awards for its Organic Research & Training Centre. With a portfolio of over 962 scientific recommendations, VNMKV has developed high-yielding and stress-tolerant crop varieties such as "Parbhani Kranti" in okra, India's first biofortified sorghum variety "Parbhani Shakti," and the hybrid cotton "NHH 44 (Bt)." This university stands out in Maharashtra for its pioneering large-scale production of Biomix Consortium and biofertilizers, benefiting over 1 lakh farmers across the state and generating an impressive ₹16.50 crores in revenue over the last five years. The university has also pioneered innovative farm implements to enhance agricultural productivity. VNMKV continues to excel in delivering region-specific training programs, promoting sustainable farming practices, and equipping farmers with advanced technologies, significantly contributing to agricultural development and food security.

Content of the Short course

Day 1 (27.01.2025)	
1	Harnessing beneficial microbes for crop health enhancement and sustainable crop yield.
2	Biological management of soil-borne diseases (Lecture).
3	Role of entomopathogenic fungi in pest management (Online).
	Acquaintance with Department laboratories and facilities (Visit/Orientation).

Day 2 (28.01.2025)	
4	Sustainable management of Pulse crop diseases.
5	Techniques for developing microbiome based formulations (Theory).
6	Rhizosphere microbe isolation and multiplication for Bio-agent production (Lecture & Practical).

Day 3 (29.01.2025)	
7	Role of beneficial microbial interventions in a crop production under changing climate.
	Plant disease management strategies for sustainable horticulture.
8	Biological management of soil-borne diseases of Citrus.
9	Beneficial microbes for sustainable agricultural production and soil health enhancement. (Lecture and Practical).



Day 4 (30.01.2025)	
10	Streptomycetes and Micromycetes as Promising Antagonists against Fungal Phytopathogens (Lecture).
11	Role of <i>Trichoderma</i> in crop health management
12	Molecular techniques in micro-biome isolation and identification: Implementing DNA Fingerprinting and Diversity analysis for comprehensive Plant Beneficial microorganisms (Lecture).
	Hands on training on DNA isolation of micro-biome to for molecular identification.

Day 5 (31.01.2025)	
13	Role of natural enemies in pest management.
14	Techniques for the detection of plant and seed-endophytic fungi and bacteria (Lecture and Practical).
15	Climate resilient technologies for sustainable agriculture.
	Role of Nematophagous fungi in sustainable Agriculture

Day 6 (01.02.2025)	
16	The Significance of entomopathogenic fungi in Pest Management Across Key Crop Species (Practical).
17	Native Microbiome for horticultural crops and their applications for disease management with special reference to Banana and Pomegranate (Online).
18	Visit to organic farming research farm.

Day 7 (02.02.2025)	
19	Role of beneficial soil microbes for the degradation of lignocellulosic wastes.
20	Beneficial microbial communities: Principles and utilization in ecofriendly farming (Lecture).
21	Exploring the potential of endophytic microorganisms against the plant pathogens (Lecture).

Day 8 (03.02.2025)	
22	Development of microbial formulations for commercial production.
23	Role of bacterial antagonists in plant disease management.
24	Green synthesis of Nano particles: an ecofriendly approach. (Lecture & Practical).

Day 9 (04.02.2025)	
25	Plant growth promoting rhizobacteria (PGPR) as green bioinoculants: recent developments, constraints and prospects.
26	Protocol for the Production of Biofertilizers and Biopesticides to ensure Quality of Antagonistic Microorganisms: Adherence to ISI Standards and Determination of Antagonist Viability Counts (Lecture).
27	Role of resistance breeding in crop health enhancement.
	Sustainable management of diseases of millets.



Day 10 (05.02.2025)	
28	Disease management in sustainable production system intensification.
29	Understanding Microbial biopesticides: conceptualization and Real-world Applications (Lecture)
30	Quiz session and discussion

Accommodation

Selected participants will receive free boarding and lodging at the university guest house. Food expenses will be covered by the organizers as per ICAR norms. Local participants will not receive boarding and lodging, but will be provided with working lunch and intersession tea. Participants should not bring family members due to limited hostel facilities. No dearness allowances will be paid.

Travelling allowance

Travelling allowances (TA) will be provided by the organizers as per the ICAR norms. Participants are expected to make their own arrangement to reach the venue in advance. The travel expenses will be restricted to a maximum of AC-II tier of train or any other means of transport, as the case may be, upon production of actual ticket by the participants. TA will be paid for onward and return journey between the place of duty of the participants and the venue the Short Course by the shortest possible route. TA will be paid for onward and return journey between the place of duty of the participants and the venue the Short Course by the shortest possible route.

Registration

Interested participants who meet the eligibility criteria are required to apply through the CBP portal (<https://cbp.icar.gov.in>) by submitting a duly filled application form, approved by the competent authority, to the Course Director no later than December 31, 2024. In addition to the online submission, a hard copy of the approved application form must be sent to the Course Director, accompanied by a non-refundable postal order or demand draft (DD) of ₹50, drawn in favor of **Comptroller, VNMKV, Parbhani**, payable at SBI, MKV, Parbhani. The scanned copy of the approved form must also be uploaded on the CBP portal. Only applications submitted through the portal will be considered. A total of 25 participants will be selected for the 10-day short course training based on their eligibility.

Last date of applications: 31.12.2024

Intimation to selected candidates: 04.01.2025

Confirmation from participant: 08.01.2025

How to reach ?

Parbhani is well-connected by road, rail and air. By road Parbhani is accessible via National and State Highways, with bus services, taxis, and private vehicles. Parbhani Junction offers rail connectivity to major cities like Mumbai, Pune, Hyderabad, and Nagpur. The nearest airports are Nanded Airport (70 km) with limited domestic flights, and Aurangabad Airport (190 km), well-connected to cities like Mumbai, Delhi, and Hyderabad. Local transport within Parbhani includes auto-rickshaws and taxis.

📍 https://maps.app.goo.gl/tanEXfJbZ6wAb6Fu6?g_st=com.google.maps.preview.copy



**Short Course training programme on:
 Application format for participation in training
 (Online on CBP Portal)**

CBT Poratl link: <https://cbp.icar.gov.in/>

1. Name (in block letters) :
2. Designation :
3. Present employer address :
4. Address to which reply should be sent :
5. Permanent address :
6. Date of birth:
7. Sex:
8. Teaching/research/professional experience (mention post held) :
 during last 5 years and "umber of publications
9. Marital status :
10. Mention if you have participated in any research seminar. :
 Summer/Winter/Short Courses etc. during last five (5) year under I.C.A.R./Other Organizations
11. Draft/Postal order for Rs. 50/- (in favour of Comptroller, VNMKV, Parbhani to Training Institute)
 towards registration (non-refundable), if applicable.:
 Bank:
 Postal order/DD no.:
 Dated:
12. Academic record

Degree	Discipline	Year	Class

13 Recommendations of forwarding Institute:

Recommended

Signature:

Date:

It is certified that the information was furnished by the office record and was found corrected

Tourist Attractions nearby



For more information & correspondence contact

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**Vasant Rao Naik Marathwada Krishi Vidyapeeth
Parbhani - 431 402 Maharashtra, India**



Year of Establishment : 1972

Mandates : Education, Research and Extension Education

Significant achievements (2023-24) under the Leadership of Hon.Vice-Chancellor, Dr. Indra Mani

- Imparted education to 5070 UG, 470 PG/PhD students across 7 faculties and 3780 diploma skill students. 29.9 % UG and 60.7 % PG/ PhD students employed, 145 entrepreneurs and many self-employed professionals.
- Established Drone RPTO, Drone Professional Certification Course (6 Months) and Drone Custom Hiring Centre in collaborations with 3 industries and 1 startup.
- Established 6 advanced referral laboratories related to soil and plant health and 2 commercial bio products manufacturing units.
- Established Common Incubation Centre for sugarcane juice, jaggery and spices processing also; Maharashtra mechanization centre for skilling students and entrepreneurs, Generated Rs.20.5 crore funding under CSR.
- Developed three straight Bt cotton Varieties viz., NH 1901Bt, NH 1902 Bt & NH 1904 Bt for central zone which will help to bring sustainability in cotton production.
- Developed First CMS-based pigeon pea hybrid from the public sector BDNPH 2018-5. Pigeon pea variety BDN-711 spreads over 3.0 lakh ha area accruing estimated additional benefit of 2500 cr.to farmers.
- Climate-resilient varieties of soybean released have helped boost the average productivity of farmers by 10 to 20 percent, resulting in an estimated additional benefit of Rs.4500 crores to farmers.
- Conversion of 2,500 acres of barren land into breeder seed production farm powered by seed to seed mechanization in major crops helped to double breeder seed production.
- Biomix, a liquid consortium benefited 1,08,285 farmers in last five years and generated a revenue of Rs. 4.8 crore in the year 2024.
- Strong linkage developed under 'Mera Gaon Mera Gourav' (*Maza Ek Diwas Mazya Baliraja sobat*) Campaign in 495 Villages.
- Farmers benefitted through different extension programme 8.26 lakh; linked through social Media 13.72 lakh (2023-24).