



N/AHEP



**Two Days Workshop cum Training on
“Advanced Vegetable Robotic Grafting Technology
in Agriculture
for
Students, Researchers, Faculty, Farmer and Nursery Entrepreneur**

13th to 14th March, 2023



National Agriculture Higher Education Project

Centre of Excellence : Digital Farming Solutions for Enhancing Productivity

by Robots, Drones and AGV's (DFSRDA)

Vaswantrao Naik Marathwada Krishi Vidyapeeth, Parbhani (M.S.) INDIA

About University

The Marathwada Krishi Vidyapeeth (Presently renamed as Vasantrya Naik Marathwada Krishi Vidyapeeth) established in 1972 on Land Grant pattern at Parbhani to fulfill the regional aspirations of fields, undertake research and facilitate technology transfer in marathwada region of Maharashtra.

Vasantrya Naik Marathwada Krishi Vidyapeeth (VNMKV) Parbhani, is one of the prestigious agricultural universities in India. Since its inception, it has gained recognition as an innovative organization in the term of education and research in agriculture. It takes care of research and facilitates agriculture technology transfer in marathwada region of Maharashtra .

About Project

The Centre of excellence for digital farming solutions for Enhancing Productivity by Robots, Drones and AGVs (DRSRDA) Under Center for Advanced Agriculture and Technology (CAAST) is being implemented in Vasantrya Naik Marathwada Krishi Vidyapeeth ,Parbhani , Maharashtra under Sponsored by National Agriculture Education Project (NAHEP) of Indian Council of Agriculture Research (ICAR), New Delhi and World bank .Government of India since 2019.The main objective of this center is to train PG /Ph.D students and faculties about advance in Agriculture science and technology. Facilities available in NAHEP is hardware and software setup, Mechatronics, CAD/CAM/CAE, 3D Printers and Instrumentation Laboratories for Agribots, Agi-Drones and Agri-AGVs.So that a holistic facility developed at this Center to raise the standard of current agricultural education system. In our center we had conducted 30 national /international training program and also we conducted 11 webinars in this total 12000 beneficiaries are gets benefitted.

As a part of this project, we are organizing Two Days Workshop cum Training on “Advanced Vegetable Robotic Grafting Technology in Agriculture for students, Researchers, Faculty, Farmer and Nursery entrepreneur.

Training Background

Farming is the ancient occupation in every civilization. It plays an important role in reforming human civilization. Due to rapid urbanization and industrialization as well as impact of global warming and population growth land under cultivation is further going to decrease. Due to continuous cultivation, frequent drought, flood conditions and unpredictability of climate and weather patterns, rise in temperature, river pollution, poor water management and wastage of huge amount of water, decline in ground water level, etc. are threatening food production under conventional soil-based agriculture. Under such circumstances, in near future it will become impossible to feed the entire population using traditional farming system of agricultural production only. That's why in Agriculture we want of upgrade and modernization is necessary.

Interest in urban agriculture has been spurred by a confluence of factors, most notably the demographic shift leading to two-thirds of the world's population becoming urbanized by 2050. Food scarcity is the horrific situation occurred in dense populated countries. Almost one in seven people are lacking of food and hunger around the world.

India is second largest producer of vegetables in the world followed by China. Area under vegetables 10.29 million ha and total production 176.17 million tones .The researchers are now being directed for improvement in quality to make our balanced diet along with other diets. Many dieticians say to take 300g of vegetables every day to for balance diet. Vegetables are productive foods are carbohydrates, protein, and rich source of vitamins and mineral i.e. called protective food.

The grafting is one of the tools for sustainable vegetable production by using resistant rootstock. Vegetable grafting is a relatively new technology. That gives disease and pests free grafted plant with less mortality percentage and more yield. This is possible with the help of grafting robots. Vegetable grafting robots is graft two variety of vegetable crops in same family and it is very easy and time efficient technology. In this we can graft 750-800 seedling /hours with success percentage of 93% to 95%. After successive grafting the seedling is shifted in the healing chamber to maintain humidity level for better growth and minimize the water loses (transpiration).The training is giving the knowledge about vegetable grafting as well as self - employment generation.

Objectives

1. To eliminate soil borne pests and diseases that infects vegetables and minimize the problems of salinity and soil acidity.
2. To initiate the flowering and fruit set at low temperature which saves the energy of polyhouse to maintain day/night temperature regime.
3. To improve tolerance of vegetables to abiotic stresses

Contents

- Introduction of Grafting
- Method of propagation.
- Genetic breeding for root stock breeding
- Root stock breeding current practices and future technology.
- Grafting as a tool for tolerance of abiotic stress
- Grafting as a agrotech for reducing pest and diseases.
- Quality for grafted vegetable
- Physiological and molecular mechanism of grafting compatibility.
- What is vegetable grafting robots
- Practical application and specialty of crops .
- How to perform grafting through vegetable grafting robots.

Target Audience

PG, Ph.D. Students, Faculties, Scientists of Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani other Universities and farmers from different parts of Maharashtra and nursery entrepreneur and others. Agriculture, Horticulture & Agriculture Botany departments are eligible to register and are requested to take advantage of the training course for self development.

About Selection

- 1) The Whatsapp Group of the selected candidates will be formed and will be intimate at least one day before.
- 2) Alternatively Candidates can keep accessing the NAHEP-CAAST-VNMKV website (<https://nahep.vnmkv.org.in>) / QR code regarding the selection, preferable on the day before the start of the Training.



- 3) Certificates will be issued to those participants only who will complete Training.

EXPERTS SCHEDULE

Sr. No.	Date	Time	Topic	Participants	Speaker
1	13.03.2023	10.00 AM to 05.00 PM	Information about vegetable grafting	Students/Faculty	Mr. Jerme Helper Robotech, South Korea
			Advance in vegetable grafting by using Robots		
2	14.03.2023	10.00 AM to 05.00 PM	Information about vegetable grafting	Farmers / Entrepreneur /Nursery owner, Nursery Supervisors and Others	
			Advance in vegetable grafting by using Robots		

Registration

Duration of Training: 13th to 14th March, 2023 (Two Days)

Registration Fee (Non Refundable): No Registration fees

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Dr. Indra Mani
Hon. Vice-Chancellor
NAHEP-VNMKV, Parbhani

Patrons



Dr. R. C. Agrawal
National Director
NAHEP, ICAR, New Delhi

Chief Convenors



Dr. D. N. Gokhale
Director of Instruction & Dean (F/A)
VNMKV, Parbhani



Dr. Anuradha Agrawal
National Co-ordinator
NAHEP, ICAR, New Delhi

Convenor



Dr. G.U. Shinde
Principal Investigator
NAHEP-CAAST-DFSRDA
VNMKV, Parbhani

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Training Coordinator

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