



**Department of Plantation, Spices, Medicinal
and Aromatic crops
ASPEE College of Horticulture
Navsari Agricultural University
Navsari – 396 450 (Gujarat)**



ACTIVITIES AND ACHIEVEMENTS Of DEPARTMENT

:ACADEMIC ACTIVITIES:

**List of Courses offered by the Department for Post Graduate Programme
(As per BSMA Committee)**

M. Sc. Horticulture				
S. N.	Sem.	Course No.	Title of Course	Credit hrs
1	Odd	PSM 501*	Production of Plantation Crops	2+1
2	Even	PSM 502*	Production of Spice Crops	2+1
3	Odd	PSM 503*	Production of Medicinal and Aromatic Crops	2+1
4	Even	PSM-504*	Breeding of Plantation and Spice Crops	2+1
5	Odd	PSM 505*	Breeding of Medicinal and Aromatic Crops	1+1
6	Even	PSM506*	Systematics of Plantation and Spice Crops	1+1
7	Odd	PSM 507	Systematics of Medicinal and Aromatic Crops	1+1
8	Even	PSM 508	Underexploited Plantation, Spice, Medicinal and Aromatic Plants	2+0
9	Odd	PSM 509	Growth and Development of Plantation, Spice, Medicinal and Aromatic Crops	2+1
10	Even	PSM 510	Biochemistry of Plantation, Spice, Medicinal and Aromatic crops	2+1
11	Odd	PSM 511	Biodiversity and Conservation of Plantation, Spice, Medicinal and Aromatic Crops	2+1
12	Odd	PSM 591	Master's Seminar	0+1
13	Even/Odd	PSM 599	Master's Research	0+30
* Compulsory among major courses				Total 60

**List of Courses offered by the Department for Ph. D. Programme
(As per BSMA Committee)**

Ph.D. Horticulture				
SN	Sem.	Course No.	Title of Course	Credit hrs
1		PSM 601*	Advances in Production of Plantation and Spice Crops	3+0
2		PSM 602*	Advances in Production of Medicinal and Aromatic Crops	3+0
3		PSM 603*	Recent Breeding Approaches in Plantation, Spice, Medicinal and Aromatic Crops	3+0
4		PSM 604	Advanced Methods in Laboratory Techniques	1+2
5		PSM 605	Biotechnological Approaches in PSMA Crops	3+0
6		PSM 606	Abiotic Stress Management in Plantation, Spice, Medicinal	2+1

			and Aromatic Crops	
7		PSM 607	Organic Spice and Plantation Crops Production	2+1
8		PSM 608	Marketing and Export of Plantation, Spice, Medicinal and Aromatic Crops	2+1
9		PSM 691	Seminar-I	0+1
10		PSM 692	Seminar-II	0+1
11		PSM 699	Research	0+75
<i>*Compulsory among major courses</i>				Total
				101

Number of students awarded degree since commencement of PG programme in the Department

M.Sc. Horticulture	Ph. D. Horticulture
31	02

PG students enrolled in Master Programme (2024-25 and 2025-26)

SN	Name & registration Number of Student	Name of Major Guide	Year of enrollment
1	Bhatt Om R.	Dr. P. P. Bhalerao	2024-25
2	Ladumor Vandana K.	Dr. P. P. Bhalerao	2022-26

Post Graduate Students who have cleared NET in the Discipline of PSMA

SN	Name	Year
1	Rathod Shilpa	2015-16
2	Prajapati Vishal	2018-19
3	Dhoti Sachin	2019-20
4	Jyoti Upper	2019-20

Medalist Students of the Department

Sr. No.	Name of student	Year
Late Mrs. Indumatiben and Dr. Pravinbhai Shukla Gold Plated Bronze Medal for M. Sc. Horticulture in PSMA		
1.	Nikita Jain	2012-13
2.	Chavan Ruturaj Sayajirao	2013-14
3.	Prajapati Nikita Harshadbhai	2016-17
4.	Ashwini Yaddalagundi	2017-18
5.	Sachin A J	2018-19
6.	Prajapati Vishalkumar Ramanbhai	2019-20
7.	Jyoti Uppar	2020-21
8.	Archita M V	2021-22
9.	Sowmya K	2022-23
10.	Bhat Manasa	2023-24
11.	Suvarna	2024-25



Sachin A J



Prajapati Vishalkumar R.



Archita M V



Swomya K.



Bhat Manasa S.

RESEARCH ACTIVITIES

Focus Areas

1. Advancement in teaching with field exposure to the graduates and postgraduates students of PSMA.
2. To speed- up the activities of research in the area of PSMA.
3. Introduction to evaluation of new PSMA crops.
4. To prepare planning for different types of extension activities and training programs.
5. Provide quality planting material of PSMA crops to farmers.
6. Breeding programmes on commercially important PSMA crops of this area.
7. Collection, evaluation and maintenance of different germplasm of PSMA crops.
8. To conduct need-based research on coconut for different agro ecology of South Gujarat.
9. Development of suitable agro-techniques with respect to yield and quality of PSMA crops.
10. To increase the area of coconut through TSP under Navsari, Dang, Valsad and Narmada districts of south Gujarat (As per survey and project programme).
11. To identify high yielding, superior quality varieties of different PSMA crops
12. Value added products from inflorescence and tender as well as dry nuts of coconut.
13. Pesticide residue analysis on coconut produces to ensure safe use.
14. Extension activities focusing on participatory approaches at community level and training the extension personnel for effective transfer of technology.

Research Schemes in Operation

Sr. No.	Title of Research Project	Year of Commencement & Budget Head	PI & Co-PI	Funding Agency
1	All India Coordinated Research Project on Plantation crops	2008-09 (B. H.: 329/2044)	Dr. Pankaj P. Bhalerao	ICAR
2	Research and development in plantation, spices, medicinal and aromatic crops	2023-24 (B. H.: 329/12108)	Dr. Pankaj P. Bhalerao	Plan Scheme
3	Mission for Integrated Development of Horticulture	2010-11 (B. H.: 329/18930-1)	Dr. Pankaj P. Bhalerao	Other Agency

1. All India Coordinated Research Project on Plantation crops (BH: 329/2044)

Objectives:

- To identify, conserve and utilize elite genetic resources for useful traits in palms and cocoa from different agro-climatic regions and to evaluate performance of varieties/hybrids under different locations and to facilitate release of varieties/hybrids under different locations.
- To improve input use efficiency and develop location-specific palm based integrated farming systems to enhance the productivity per unit area and organic cultivation packages for palms and palm-based farming systems.
- To demonstrate and transfer of technologies to the farmers.

2. Research and development in Plantation, Spices, Medicinal and Aromatic crops (B. H.: 329/12108)

Objectives:

- To develop scientific production technologies to increase crop productivity and to uplift socio-economic status of farmers and other stake holders.
- To develop new and improved varieties/hybrids of PSMA crops will develop for various tolerance against biotic and abiotic stresses for farmers.
- To assess different genotypes /accessions of PSMA crops will be collect and evaluate under Gujarat condition for agronomical traits.
- To develop rapid multiplication techniques will be developed for PSMA crops for farmers/nurseries and other stake holders.
- To develop technologies for post-harvest management and value.
- Transfer of technology to the farmers and other beneficiaries to increase the crop production area across the state.

3. Mission for Integrated Development of Horticulture (BH: 329/18930-1)

Objectives:

- Seed production programme of turmeric crop.
- Selling of produced seeds to the farmers/organization/institute *etc.*

Overview of Research Trials



Intercropping of Tannia and turmeric under coconut plantation



Green manuring under coconut garden



Rubber plantation and distribution to the farmers

: Research Recommendations:

A) Production Technology:

Year: 2019

1. Evaluation of nutrient management under coconut based cropping systems for different agro climatic regions.

The farmers of South Gujarat growing coconut cv. D x T at 7.5 m x 7.5 m are advised to grow banana, elephant foot yam, tannia and turmeric as a component crop under coconut garden and apply the nutrients as per following schedule to increase the yield of coconut and component crops along with higher remuneration.

SN.	Name of Crop and variety	In-organic and Organic nutrients					Time of application	
		50% RDF of NPK	Recycling of Biomass (vermicomp ost) (Kg/plant)	Biofertilizer (ml/plant) <i>Azotoactor</i>	<i>In situ</i> green manuring (kg/plant)	Vermiwash (lit/ha)	Organics (two splits)	In-organics
1	Coconut (DxT)	N 750 P 375 K 750 (g/plant)	40 (20 + 20)	100 (50+50)	20 (10+10)	100 (50+50)	one month after application of In-organics	As per the recomondation
2	Banana (G-9)	N 150 P 45 K 100 (g/plant)	6 (3+ 3)	20 (10+10)	5 (2.5 + 2.5)	10 (5+5)	First at basal and second 3 MAP	
3	Elephant Foot Yam (Gajendra)	N 40 P 30 K 50 (Kg/ha)	3 (1.5 + 1.5)	10 (5+5)	3 (1.5 + 1.5)	5 (2.5+2.5)		
4	Tannia (Local)	N 40 P 30 K 50 (Kg/ha)	1 (0.5 + 0.5)	5 (2.5+2.5)	2 (1.0 + 1.0)	5 (2.5+2.5)		
5	Turmeric (Sugandham)	N 30 P 30 K 30 (Kg/ha)	5 t/ha (at time of planting)	20 lit/ha (5+5)	100 kg/ha (at time of planting)	10 (5+5)		

2. Performance of cocoa varieties/hybrids for their performance as intercrop in coconut gardens

Farmers of south Gujarat growing coconut cv. WCT at 7.5 x 7.5 m are advised to grow VTLCH-4 cocoa clone as intercrop at intra spacing of 3.75 m under coconut garden for getting higher yield of coconut and cocoa.



Production of planting material

Year:2024-25

:Planting materials:

EFY: Gajendra (1000kg)

Tannia: Local (125 kg)

Turmeric: GNT-2, GNT-3 and GNT-4 (12000 kg)

:Seedlings:

Coconut: DxT-F2 (3200 seedlings); (5000 seed nuts)

EXTENSION SERVICES

- ❖ Participation of faculty in *Krusha Mahotsava* programme of GoG
- ❖ Participation in *Krusha Mahotsava*- a flagship programme of GoG.
- ❖ Diagnostic/field visits at farmers fields.
- ❖ Organizing exhibition-cum-competition, Farmers' training, *shibir etc.*
- ❖ Dissemination of technology through publications.
- ❖ Advisory services provided to farmers through 'cell phone and letter's as when required.
- ❖ TV telecast and radio talks on various aspects of PSMA crops.
- ❖ "*Mera Gaon Mera Gaurav*" programme related activities.
- ❖ The articles related to different fruit crops are published in vernacular language for the benefits for farmers.
- ❖ Training to subject matter specialist is imparted under T&V programme.
- ❖ The training to farmers is also given which is organized by SSK and FTC.
- ❖ Participation in farmer's day/celebration days.

TRANSFER OF TECHNOLOGY (ToT)



Celebration of WORLD COCONUT DAY-2024



**Farmers training programme
at different locations**



Training & distribution of different inputs to the farmers under Tribal sub-plan (TSP)



Participation in Rabi Krushi Mohastav/Krushi Mela-2024



**Farmer's
field/diagnostic visit**



Visit of Hon'ble Vice Chancellor along with DoR and Dean, ACH, NAU, Navsari



Visit of Dr. Sudhakar Pandey, ADG (FVSMA) along with Dr. Byju, PC (Tuber crops)



Visit of Dr. R. K. Mathur, Director (IIOR), Hyderabad



Other guests and students visit at AICRP (PC) project



Visit of Dr. B. A. Jerard, PC (PC) along with Scientists, CPCRI, ICAR, Kasaragod (Kerala)

Infrastructure Available

Department

- PSMA Lab
- Wi-Fi facility
- List of important equipment and machines at department of PSMA

Soxlate machine	Microscope
Weight balance	Chaff cutter machine
Oven or dryer	Scanner
Desktop computers/laptop	Canon printer

Farm

- Experimental Farm Area: 5.0 ha
- Storage Godown: 03
- Small scale vermicompost and vermiwash unit: 01



Production of vermicompost and vermiwash by using coconut dry leaves