



**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	PSMA 510	Biochemistry of Plantation, Spice, Medicinal and Aromatic crops	2+1
11	Odd	PSMA 511	Biodiversity and Conservation of Plantation, Spice, Medicinal and Aromatic Crops	2+1
12	Odd	PSMA 591	Master's Seminar	0+1
13	Even/Odd	PSMA 599	Master's Research	0+30
*Compulsory			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
*Compulsory			Total	101

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

M.Sc. Horticulture	Ph. D. Horticulture
29	02

PG students enrolled in Master Programme (2022-23)

SN	Name & registration Number of Student	Name of Major Guide	Year of enrollment
1	Thumar Jignesh M.	Dr. P. P. Bhalerao	2022-23

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 Raturaj 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



Sachin A J



Prajapati Vishalkumar R.



Archita M V



Sowmya K

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 Palms	2008-09 (B. H.: 329/2044)	Dr. Pankaj P. Bhalerao	ICAR
2	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 Palms (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. 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 turmeric and EFY under coconut plantation



Intercropping of Tannia and turmeric under coconut plantation



Green manuring under coconut garden



Rubber plantation

: 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 (vermicompost) (Kg/plant)	Biofertilizer (ml/plant) <i>Azotoactor</i>	<i>In situ</i> green manuring (kg/plant)	Vermiwash (lit/ha)	Organics (two splits)	In-organics
							one month after application of In-organics	As per the recomondation
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:2022-23

:Planting materials:

EFY: Gajendra (2000kg)

Tannia: Local (301kg)

Turmeric: GNT-1, GNT-2 and Sugandham (7008 kg)

:Seedlings:

Coconut: DxT-F2 (3000 seedlings); (7000 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 by organizing training programme on 'Production Technology & Value addition in coconut'



Farmer's training programmes/Guest lectures



Farmer's field/diagnostic visit



Farmer's field/diagnostic visit



Dr. Ravi Bhat and Dr. Sumitha, Scientists, PC Cell, CPCRI, Kasaragod (Kerala) visited AICRP (Palms) project



Making of videos on different aspects of coconut crop and Radio talk



સુત્રાપાડા : કૃષિ વિજ્ઞાન કેન્દ્ર તથા યુનિવર્સિટી દ્વારા વિશ્વ નાળીયેરી દિવસની ઉજવણી

નાળીયેરી ખેતી અને મુલ્યવર્ધન મુદ્દે તાલીમ કાર્યક્રમ



અભવન, સમ્બંધિત મંત્રી, સુત્રાપાડા એ.આઈ.સી.આર.પી. અને પામ્મ વેલ્ફેરના રજત વર્ષની અને વિશ્વ નાળીયેરી દિવસની ઉજવણી કમિશન કેવીકે ગીર સોમનાથ આદે કેવીકે અને નવસારી કૃષિ યુનિવર્સિટી, નવસારીના સંપૂર્ણ ઉપક્રમે "નાળીયેરીની ખેતિ અને મુલ્યવર્ધન" વિષય પર એક દિવસીય તાલીમ કાર્યક્રમનું આયોજન કરવામાં આવ્યું હતું. નાળીયેરીને સુસ્વાદુરુચી બનાવવા અને ભેજવળા લાભાનને નેજા પાડવા કાસ્ટાકાયા ફિલ્મનાં અવનવની યાદ દોરે તુષ્ટતામાં ધીર સોમનાથ વિજ્ઞાન સોશીયી યુનિવર્સિટીનું આયોજન કરવામાં આવ્યું હતું.

કાર્યક્રમનું આરંભ સમારોહન પુસ્તકોન નુકમ-વિષય નિષ્ણાંત (કૃષિ વિસ્તારણ)એ કર્યું હતું અને આપણા વિસ્તારનાં ખેડૂત મારે સંબંધી આ સેને સંબંધી તારે ધીરે યાદ કરી હતી.

કાર્યક્રમમાં વિવિધ વિસ્તાર-કુલ ડો. પંકજ ભાલેરાવ, મદદનીશ પ્રાધ્યાપક, નક્યુ, નવસારીએ નાળીયેરીની વૈજ્ઞાનિક ખેતિ પ્રાદર્શન, તેની વિવિધ જાતો, સંકીર્ણ રોગ વિષયનું વ્યવસ્થાપન વિષયે ખુબ જ ઉદ્દાગ્રણીક મહત્વની આવી હતી. ડો.વિજયન મગરવી, આર-નીસ પ્રાથમિકાથી રીએએચ, નક્યુ, નવસારીને નાળીયેરીએ મુલ્યવર્ધન તથા તેના બજાર વ્યવસ્થાપન વિષય પર પ્રકાશ યાદમાં હતો. આ

નાળીયેરીમાં રોગને લઈ માર્ગદર્શન અપાયું



કોડીનાર | ગુજરાતમાં ગીર સોમનાથ જિલ્લામાં સોશી વયુ વાવેતર થાય છે. ઉપરાંત 2009 થી વિશ્વ નાળીયેરી દિવસની ઉજવણી શા માટે કરાઈ છે. તેના વિષે રણજીતસિંહ બારડ-વિષય નિષ્ણાંત (ભાગાયત), કેવીકેએ ખેડુતો ને માર્ગદર્શન આપ્યું હતું. ડો. પંકજ ભાલેરાવ, મદદનીશ પ્રાધ્યાપક, નક્યુ, નવસારીએ નાળીયેરીની વૈજ્ઞાનિક ખેતિ પદ્ધતિ, તેની વિવિધ જાતો વિશે સમજ આપી હતી. ડો. જિલેન મયાણી, મદદનીશ પ્રાધ્યાપક-પીએએચેમ, નક્યુ, નવસારીએ નાળીયેરીમાં મુલ્યવર્ધન તથા તેના બજાર વ્યવસ્થાપન વિષય પર પ્રકાશ યાદમાં હતો. કાર્યક્રમનું સફળ સંચાલન પૂજાબેન નકુમ-વિષય નિષ્ણાંત (કૃષિ વિસ્તારણ)એ કર્યું હતું આ કાર્યક્રમમાં ગીર સોમનાથ અને જૂનાગઢ જિલ્લાના કુલ 76 જેટલા ખેડુતો હાજર

કેવીકે ગીર સોમનાથ અને નવસારી કૃષિ યુનિવર્સિટીના સંયુક્ત ઉપક્રમે વિશ્વ નાળીયેરી દિવસની ઉજવણી કરાઈ

(સમ્બંધિત મહી સેએલ, સોમનાથ) એ.આઈ.સી.આર.પી. અને પામ્મ વેલ્ફેરના રજત વર્ષની અને વિશ્વ નાળીયેરી દિવસની ઉજવણી કમિશન કેવીકે ગીર સોમનાથ આદે કેવીકે અને નવસારી કૃષિ યુનિવર્સિટી, નવસારીના સંપૂર્ણ ઉપક્રમે "નાળીયેરીની ખેતિ અને મુલ્યવર્ધન" વિષય પર એક દિવસીય તાલીમ કાર્યક્રમનું આયોજન કરવામાં આવ્યું હતું. નાળીયેરી એ સુસ્વાદુરુચી બનાવવા અને ભેજવળા લાભાનને નેજા પાડવા કાસ્ટાકાયા ફિલ્મનાં અવનવની યાદ દોરે તુષ્ટતામાં ધીર સોમનાથ વિજ્ઞાન સોશીયી યુનિવર્સિટીનું આયોજન કરવામાં આવ્યું હતું.



કાર્યક્રમનું આરંભ સમારોહન પુસ્તકોન નુકમ-વિષય નિષ્ણાંત (કૃષિ વિસ્તારણ)એ કર્યું હતું અને આપણા વિસ્તારનાં ખેડુતો મારે સંબંધી આ સેને સંબંધી તારે ધીરે યાદ કરી હતી.

કૃષિ વિસ્તારણ

કાર્યક્રમમાં વિવિધ વિસ્તાર-કુલ ડો. પંકજ ભાલેરાવ, મદદનીશ પ્રાધ્યાપક, નક્યુ, નવસારીએ નાળીયેરીની વૈજ્ઞાનિક ખેતિ પ્રાદર્શન, તેની વિવિધ જાતો, સંકીર્ણ રોગ વિષયનું વ્યવસ્થાપન વિષયે ખુબ જ ઉદ્દાગ્રણીક મહત્વની આવી હતી. ડો.વિજયન મગરવી, આર-નીસ પ્રાથમિકાથી રીએએચ, નક્યુ, નવસારીને નાળીયેરીએ મુલ્યવર્ધન તથા તેના બજાર વ્યવસ્થાપન વિષય પર પ્રકાશ યાદમાં હતો. આ



Dr. Y. Geethalakshmi, Vice-Chancellor, Tirumala Agricultural University, Comptroller, in her inaugural address, emphasized on non-scientific management and service palms remain major impediments to achieving higher productivity. She urged for developing varieties tolerant to pests, diseases and weather extremities. Dr. Geethalakshmi exhorted the palm researchers to enlighten the farmers on crop diversification and value addition to mitigate the frequent price fluctuations. She outlined the scope for all palm and palytish and hinted the need for mechanization and artificial intelligence with robotics and sensors in the era of labour scarcity.

The former Project Coordinators Dr. P. Raghunath, Former Executive Director, ICC (APCC), Jakarta, Dr. S. Anilraj, Former Director, ICPR, Puducherry, Dr. H. Hameed Khan Former Project Coordinator of AICRP (Palms) and Dr. H.P. Maheswarappa, Director of Research, UPB, Bagmati were the Guests of honor.

Dr. R.K. Mathur, Director, ICPR, Puducherry, Dr. V.K. Korikantannath, Former Director, ICAR Research Complex for Goa and Dr. P. Chelvanappa, Former Director, ICAR-CPCRI Kasargod, also participated in the inaugural session.

Dr. Anika Karun, Director, CPRI and Project Co-ordinator (Acting), AICRP (Palms) in the Presidential Address said that the achievements of AICRP (Palms) has helped to transform the lives of the palm growers towards economic prosperity.

Naval Centre, Gujarat received the Best AICRP (Palms) Centre Award for the year 2021. Technical Bulletin, booklets and folds prepared by the palm aertifiers were released during the event.

During the meeting, three cocoon varieties Deepav Hantha, Deepav Sona and Kalpa Vajra were recommended for release.

(Source: ICAR-Central Plantation Crops Research Institute)

31st Annual Group Meet of AICRP on Palms held during the Golden Jubilee Year

16th - 18th September 2022, Kasargod

The 31st Annual Group Meeting of All India Co-Ordinated Research Project on Palms was held at ICAR-Central Plantation Crops Research Institute, Kasargod, during 15-18 September 2022, coinciding with the Golden Jubilee Year of AICRP (Palms).





Dr. M. D. Jessy along with Dr. Thomson from Rubber Research Institute of India (RRII), Kottayam (Kerala) visited on 25-05-2022



Dr. B. Hanumanthe Gowda along with Dr. Vedhpal Singh from Coconut Development Officer, CDB, Kochi (Kerala) visited on 15-09-2022



Dr. Ravi Bhat along with Dr. Sumitha from PC cell, CPCRI, Kasaragog (Kerala) visited on 12-01-2023



Received 'Best AICRP (Palms) Centre Award-2021-22'



Received 'Young Scientist Award-2021' from SHRD society, Gaziabad, U. P.



Received 'Second Best Poster Presentation Award' from ISPP society, ICAR, New Delhi

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



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