Department of Plant Protection
ASPEE College of Horticulture
Navsari Agricultural University,
Navsari – 396 450

ACTIVITIES AND ACHIEVEMENTS

ACADEMIC ACTIVITIES:

List of Courses offered by the Department for Under Graduate Programme (As per 5th Dean's Committee)

B. Sc. (Hons.) Horticulture				
S. N.	**Sem.**	**Course No.**	**Title of Course**	**Credit hrs**
1	2	PPT 2.1	Fundamentals of Plant Pathology	3 (2+1)
2	2	NRM 2.3	Forest Protection	3 (2+1)
3	3	PPT 3.2	Fundamentals of Entomology	3 (2+1)
4	3	PPT 3.3	Nematode Pests of Horticultural Crops and their Management	2 (1+1)
5	4	PPT 4.4	Diseases of fruit, plantation, medicinal and aromatic crops	3 (2+1)
6	4	PPT 4.5	Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops	3 (2+1)
7	5	PPT 5.6	Diseases of vegetable ornamental and spice crops	3 (2+1)
8	5	PPT 5.7	Insect pests of vegetable, ornamental and spice crops	3 (2+1)
9	6	PPT 6.8	Apiculture, Sericulture and Lac Culture	2 (1+1)
			Sub Total (A)	**25 (16+9)**

Practical Manuals Published

Sr. No.	Course No.	Title of the Course	Academic Year
1.	PPT2.1	Fundamentals of Plant Pathology (2+1)	2019
2.	PPT5.6	Diseases of vegetable, ornamental and spice crops(2+1)	2019
3.	PPT4.4	Diseases of fruit, plantation and medicinal and aromatic crops (2+1) Revised	2019
4.	NRM2.3	Forest Protection(2+1)	2019
5.	PPT 3.2	Fundamentals of Entomology	2018
6.	PPT 4.5	Insect Pests of Fruit, Plantation, Medicinal and Aromatic Crops	2018
7.	PPT 5.7	Insect Pests of Vegetable, Ornamental and Spice Crops	2018
8.	PPT 6.8	Apiculture, Sericulture and Lac culture	2018
9.	PPT3.3	Nematode pests of horticultural crops and their management (1+1)	2018

Departmental Activities

Cultivation of milky mushroom and preparation of soup by students of 4th semester B.Sc. (Horti.)

Exposure Visit of UG Students

Visit to Maharana Pratap University of Agriculture and Technology, Udaipur

Visit to herbal park, Udaipur

Visit to Museum, Udaipur

Visit to National Research Centre on Seed Spices, Tabiji, Ajmer, Rajasthan


Visit to Rajasthan Agricultural Research Institute, S.K.N. Agricultural University, Jobner, Jaipur

Visit to Centre of Excellence on Protected Cultivation, IARI, New Delhi

Visit to Pinjore Garden, Chandigarh

Visit to Directorate of Mushroom Research (DMR), Solan

Visit to Y. S. Parmar University of Horticulture and Forestry, Nauni, HP

Visit to Kiwi Fruit research farm, Y. S. Parmar University of Horticulture and Forestry, Nauni, HP

Visit to regional horticultural research station, Bajaura, Kullu, H.P

Visit to Department of Vegetable Science and Floriculture, Palampur, HP

Visit to Model Organic Farm, CSKHPAU, Palampur

Visit to Mushroom Research and Technology, PAU, Ludhiana

Visit to Scientific Bee Keeping for Higher Profit and Agriculture Production, PAU, Ludhiana

Visit to Fruit Research Farm, PAU, Ludhiana

RESEARCH ACTIVITIES

Focus Areas: Research /Education

1. Integrated pest and disease management in horticultural crops
2. Epidemiological studies of horticultural crops with respect to pest and disease complex
3. Molecular characterization of insect, pest and pathogens
4. Management of pest and diseases in protected cultivation
5. Morpho-biochemical studies of various plant diseases
6. Post harvest disease management in horticultural crops
7. To produce and wide area distribution of fruit fly traps
8. To guide the PG students for their research programme
9. To improve the education level and standard of students for their holistic development

RESEARCH SCHEMES IN OPERATION

Sr. No.	Title of Research Project	Year of Commencement& Budget Head	PI & Co-PI	Funding Agency
1.	Investigation of Quarantine Pests and Post harvest diseases of mango in South Gujarat	2017-18 329/14052	PI Dr. H. V. Pandya and Co- PI Dr. P. R. Patel Dr. V. P. Prajapati	RKVY

2.	Establishment of Bio-agent (bio pesticide) production laboratory for major pests and diseases of horticultural crops	2019-20/ 18198	PI Dr. H. V. Pandya and Co- PI Dr. P. R. Patel Dr. Hemant Sharma Dr. Snehal M. Patel Dr. V. P. Prajapati	NHM
3.	Vegetable grafting to mitigate biotic and abiotic stresses in vegetable crops**.**	2019-20 B. H. 329/14054	PI Dr. Sanjeev kumar Co- PI Dr.P. R. Patel	RKVY

Overview of Research Trials

		
Fungicidal trail for the management of Marigold leaf blight	**Epidemiological studies on Marigold leaf blight**	**Screening of various marigold germplasm against leaf and flower blight diseases**
		
Survey of Mango for pest and diseases	**Hot water treatment for the management of mango post harvest diseases**	**Screening of various bush type french bean varieties against dieases**

		
Screening of Yellow vein mosaic of okra germplasms	**Screening of powedery mildew of Ardu germplasms**	**Dynamics of gerbera diseases in poly housed**
		
Evaluation of bio-efficacy of different organic modules on onion and sugarcane crops0	**Microbial count of soil sample**	
		
General layout of experiment on seasonal abundance and evaluation of botanical extracts against aphid	**Experimental site for evaluation of various botanical extracts against lily caterpillar**	
		
Seasonal abundance and management of pod borer complex in indian bean	**Development of pest management module against major pests of rose**	

Plant Protection

Recommendation for Farming Community	
1.	**Release of Little gourd variety Gujarat Navsari Little Gourd -1 (GNLG-1)** Farmers of south Gujarat AES-III are advised to cultivate little gourd LG-16 (GNLG-1) for getting higher yield with superior marketable fruit. The LG-16 (15.57 t/ha) 32.85 % higher yield over local check.
2.	**Population dynamics of *Helicoverpa armigera* (Hubner) through pheromone trap in tomato** Farmers of South Gujarat Heavy Rainfall Agro-climatic Zone III growing tomato are recommended to monitor the infestation of Helicoverpa armigera from 3rd to 18th week after transplanting tomato crop for timely management of pest.
3.	**Effect of bio pesticides on shoot borer in organic mango** Farmers of south Gujarat growing organic mango are advised to spray azadirachtin 1500 ppm @33 ml / 10 litres at the initiation of flowering and second at fifteen days after the first spray for the management of mango shoot borer.
4.	**Management of post-harvest diseases of mango using hot water treatment** Farmers, consumer and entrepreneurs are recommended to manage postharvest diseases and pest viz; anthracnose, stem end rot and fruit fly by dipping mango fruits after the harvesting in hot water at 48ºC for 60 min or 50ºC for 20 min, or 52ºC for 10 min without any adverse effect on fruits.
5.	**Bioefficacy of some insecticide and neem products against *Helicoverpa armigera* (Hubner) on Tomato** For effective control of tomato fruit borer, farmers of south Gujarat (AES III) are advised to apply two sprays of either of following insecticide, first at the time of flowering and second at 15 days after first spray for obtaining higher yield and better return. Further, the residue content of this insecticide remained below MRL in tomato fruits after three days. • **Flubendiamide 20 WDG @ 2.5 g/10 l.** • **Chlorantraniliprole 18.5 SC @ 3.0 ml/10 l.**
6.	**Population dynamics of *Helicoverpa armigera* (Hubner) through pheromone trap in tomato** Farmers of South Gujarat Heavy Rainfall Agro-climatic Zone III growing tomato are recommended to monitor the infestation of Helicoverpa armigera from 3rd to 18th week after transplanting tomato crop for timely management of pest.
7.	**Dispersal of *Trichogramma chilonis* Ishii (Hymenoptera: Trichogrammatidae) in sugarcane field** Sugarcane growers of South Gujarat Heavy Rainfall Agro-climatic Zone are advised to staple trichocard stripes on lower surface of the sugarcane leaves @ 12/ha (Aprrox. 4000 parasitized eggs/stripe) keeping distance of 30 m between two stripes for effective biological control of sugarcane borers.
8.	**Effect of bio pesticides on shoot borer in organic mango** Farmers of south Gujarat growing organic mango are advised to spray azadirachtin 1500 ppm @33 ml / 10 litres at the initiation of flowering and second at fifteen days after the first spray for the management of mango shoot borer
9.	**Management of leaf and flower blight of Marigold** The marigold growers are advised to apply three sprays of hexaconazole 4 + zineb 68 WP,

	0.072 per cent (10 g/ 10 l) or mancozeb 75WP, 0.225 per cent (30g/10 l) or tebuconazole 50 + trifloxystrobin 25WG, 0.037 per cent (4g/ 10 l) for effective management of leaf and flower blight and to get higher flower yield. The first spray should be given after initiation of disease and subsequent two sprays after the 15 days of interval.
Recommendation for Scientific Community	
1.	Among various brinjal genotypes screened, minimum little leaf infection (3.58%) was recorded in GJB-2.
2.	Dynamics of diseases in gerbera under protected cultivation Under the protected cultivation of gerbera, leaf blight disease (*Alternaria alternata*) was observed from July to August (29 th to 35 th SMW) with its maximum intensity and showed significant positive correlattion with relative humidity and negative with average temperature.
3.	Tomato genotype, NTL-2, NTL-6, NTL-7 and NTL-10 are resistant, while genotype N TL-1, NTL-8, NTL-9, and GT-2 are moderately resistant against tomato wilt.
4.	*Alternaria* sp, *Aspergillus* sp., *Fusarium* sp, *Trichoderma* sp are found the most frequently associated fungal genera with six forest trees *viz.*, *Tectona grandis* (Teak), *Leucaena leucocephala* (Subabul), *Delonix regia* (Gulmohar), *Acacia mangium* (Mangium), *Adenanthera pavonina* (Ratangunj) and *Cassia fistula* (Garmalo) using blotter and agar plate method.

EXTENSION SERVICES

- Participation of faculty in *Krushi Mahotsava* Programme of GoG.
- Diagnostic visits at farmers' fields.
- Dissemination of technology through publications.
- TV telecast and radio talks on various aspects of vegetable crops.
- "*Mera Gaon Mera Gaurav*" programme related activities.
- Monitor the field-to-field approach by individual farmer to manage pests and diseases of horticultural crops.

TRANSFER OF TECHNOLOGY (ToT)

Visit to farmer's field for disease diagnosis and suggest valuable disease management practices

Emergency meet with Dahanu (MH) farmers on sever problem of Sapota fruit rot

One day farmers training on pest and disease management in flower crops

“Khedut Din” on Mango and Sapota diseases and its management at Gadat

INFRASTRUCTURE AVAILABLE

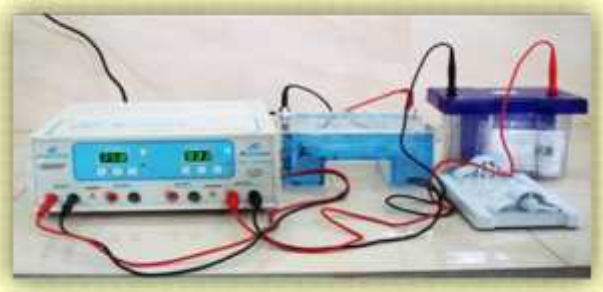
Infrastructure or Facilities available/created(with Photographs in JPG format only with sub-titles)

Sr. No.	Infrastructure or Facilities available	Sr. No.	Infrastructure or Facilities created
1.	Refrigerated centrifuge	2.	Spectrafuge
3.	Digital colony counter	4.	Microwave oven
5.	Analytical digital balance	6.	Hot air oven
7.	Digital balance	8.	Hot water bath
9.	Orbital shaker	10.	Laminar air flow
11.	Herbarium cabinets	12.	Verticle autoclave
13.	Electric loop strilizer	14.	Refrigerator
15.	Microprocessor ph system	16.	Bod incubator
17.	Elisa plate reader	18.	Elisa plate washer
19.	Polyacrylamide gel electrophoresis systems	20.	Compound microscopes
21.	Disecting microscopes	22.	Centrifuge
23.	Stereozoom microscope	24.	Microtome
25.	Lab. Projector		

REFRIGERATED CENTRIFUGE

DIGITAL COLONY COUNTER

	
ANALYTICAL DIGITAL BALANCE	**DIGITAL BALANCE**
	
ORBITAL SHAKER	**SPECTRAFUGE**
	
HERBARIUM CABINETS	**ELECTRIC LOOP STRILIZER**
	
MICROPROCESSOR pH SYSTEM	**MICROWAVE OVEN**
	
HOT WATER BATH	**HOT AIR OVEN**

	
VERTICLE AUTOCLAVE	**LAMINAR AIR FLOW**
	
BOD INCUBATOR	**REFRIGERATOR**
	
ELISA PLATE READER	**ELISA PLATE WASHER**
	
POLYACRYLAMIDE GEL ELECTROPHORESIS SYSTEMS	**MICROSCOPY LABORATORY WITH PATHOLOGICAL COMPOUND MICROSCOPES**

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<tr><td>DISECTING MICROSCOPES</td><td>INSTRUMENTATION LAB WITH CENTRIFUGE</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">STEREOZOOM MICROSCOPE</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>COMPOUND BINOCULAR MICROSCOPE</td><td>MICROSCOPE WITH CAMERA</td></tr>
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<tr><td colspan="2">LAB. PROJECTOR</td></tr>
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DIGNITARIES VISIT: GLIMPSES

Hon'ble Vice Chancellor NAU., Navsari, Dr. Z. P. Patel Departmental visit

Former Hon'ble Vice Chancellor and Director of Research and Dean PG studies visit to RKVY laboratory