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Department of Plant Protection
ASPEE College of Horticulture
Navsari Agricultural University
Navsari – 396450

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ACTIVITIES AND ACHIEVEMENTS

ACADEMIC ACTIVITIES

List of Courses offered by the Department for Under Graduate Programme

B. Sc. (Hons.) Horticulture				
SN	**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)
10	**1**	**SEC1.1**	**Mushroom culture As per 6th Dean)**	2 (0+2)
			Sub Total (A)	**27 (16+11)**

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RESEARCH ACTIVITIES

Focus Areas

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 guide the PG students for their research programme

Research Schemes in Operation

SN	Title of Project	Budget Head	PI & Co-PI
1	Establishment of Bio-agent (bio pesticide) production laboratory for major pests and diseases of horticultural crops	18198	PT-Dr. Snehal M. Patel Co- PI Dr. P. R. Patel Dr. Hemant Sharma Dr. V. P. Prajapati

: ResearchRecommendations:

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 ACIVITIES

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

Infrastructure Available

	Refrigerated centrifuge	1.	Spectrafuse
2.	Digital colony counter	3.	Microwave oven
4.	Analytical digital balance	5.	Hot air oven
6.	Digital balance	7.	Hot water bath
8.	Orbital shaker	9.	Laminar air flow
10.	Herbarium cabinets	11.	Vertical autoclave
12.	Electric loop steriliser	13.	Refrigerator
14.	Compound microscopes	15.	BOD incubator
16.	Microtome	17.	Dissecting microscopes
18.	Centrifuge	19.	Stereo zoom microscope
20.	Elisa plate reader	21.	Elisa plate washer

REFRIGERATED CENTRIFUGE

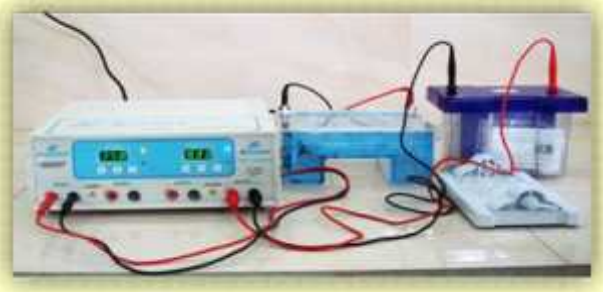
DIGITAL COLONY COUNTER

ANALYTICAL DIGITAL BALANCE

DIGITAL BALANCE

	
ORBITAL SHAKER	**SPECTRAFUGE**
	
HERBARIUM CABINETS	**ELECTRIC LOOP STRILIZER**
	
HOT WATER BATH	**MICROWAVE OVEN**

	
VERTICLE AUTOCLAVE	**HOT AIR OVEN**
	
BOD INCUBATOR	**REFRIGERATOR**

	
ELISA PLATE READER	**LAMINAR AIR FLOW**
	
POLYACRYLAMIDE GEL ELECTROPHORESIS SYSTEMS	**ELISA PLATE WASHER**
	
DISECTING MICROSCOPES	**MICROSCOPY LABORATORY WITH PATHOLOGICAL COMPOUND MICROSCOPES**
	
STEREOZOOM MICROSCOPE	**INSTRUMENTATION LAB WITH CENTRIFUGE**

	
COMPOUND BINOCULAR MICROSCOPE	**MICROSCOPE WITH CAMERA**