NAVSARI AGRICULTURAL UNIVERSITY

DEPARTMENT OF FLORICULTURE & LANDSCAPE ARCHITECTURE

ACHF NAU Let's Bloom Human Fruition

ACTIVITIES AND ACHIEVEMNETS

ACADEMIC ACTIVITIES

LIST OF COURSES OFFERED BY THE DEPARTMENT (AS PER 5TH DEANS' COMMITTEE)

B. Sc. (Hons.) Horticulture					
Sr. No.	**Sem.**	**Course No.**	**Title of Course**	**Credit hrs**	**Faculty**
1.	II	FLA- 2.1	Ornamental Horticulture	3 (2+1)	Prof. H. P. Shah
2.	III	FLA- 3.2	Breeding and Seed Production of Flower and Ornamental Crops	3 (2+1)	Dr. Sudha Patil
3.	IV	FLA- 4.3	Principles of Landscape Architecture	1 (0+1)	Prof. H. P. Shah
4.	VI	FLA- 6.4	Commercial Floriculture	3 (2+1)	Prof. M. A. Patel
5.	VI	FLA- 6.5	Medicinal and Aromatic Crops	3 (2+1)	Prof. Ankit Bhandari
			Sub-Total	**13(8+5)**	
STUDENT READY-I: Experiential Learning Programme					
Model No. 1	VII	**HWE 7.1**	**Protected Cultivation of High Valued Horticultural Crops**	**10 (0+10)**	
		HWE: 7.1.1	Production of High Valued Crops	6 (0+6)	Dr. Alka Singh
		HWE:7.1.2	Packaging and Marketing of High Valued Horticultural Crops	4 (0+4)	Prof. H. P. Shah
Model No. 3		**HWE 7.3**	**Value Addition in Horticultural crops**	**10 (0+10)**	
		HWE: 7.2.1	Production of value added Products	6 (0+6)	
		HWE: 7.2.2	Packaging and Marketing of Dry Flowers	4 (0+4)	Dr. Alka Singh
STUDENT READY-II: Rural Horticultural Work Experience					
1.	VIII	HWE. 8.3 (RHWE)	University farms (SDAU) and Visit to Horticulture	4 (0+4)	Dr. Dipal Bhatt Prof. A. J. Bhandari

			Based Industries of Gujarat Region		
Sub-Total Student Ready				**24 (0+24)**	
Total				**43(12+31)**	

LIST OF COURSES OFFERED BY THE DEPARTMENT (AS PER 4th DEANS' COMMITTEE)

B. Sc. (Hons.) Horticulture					
Sr. No.	**Sem.**	**Course No.**	**Title of Course**	**Credit hours**	**Faculty**
1.	First	FLR.1.1	Ornamental horticulture	3(2+1)	Prof. H. P. Shah
2.	Third	FLR: 3.1	Commercial floriculture	3(2+1)	Prof. M. A. Patel
3.	Forth	FLR.4.1	Principles of landscape gardening	1(0+1)	Prof. H. P. Shah
4.	Sixth	FLR 6.1	Breeding and seed production of ornamental crops	3(2+1)	Dr. Sudha Patil
5.	Seventh	HWE.7.1	Protected cultivation of high-valued flower crops	10(0+10)	Dr. Alka Singh Prof. H. P. Shah Prof. M. A. Patel Prof. Ankit Bhandari
6.	Seventh	HWE 7.3.2	Propagation and production of fruit and ornamental plants	2(0+2)	Dr. Dipal S. Bhatt
			Sub-Total	**22(6+16)**	

LIST OF PG COURSES OFFERED BY THE DEPARTMENT (AS PER 4th DEANS' COMMITTEE)

M. Sc. (Horticulture)- Floriculture & Landscape Architecture					
Sr. No.	**Semester**	**Course No.**	**Title of Course**	**Credit hrs**	**Faculty**
1.	Odd	FLA.501	Breeding of flower crops and ornamental plants	3(2+1)	Dr. Sudha Patil
2.	Even	FLA.502	Production technology of cut flowers	3(2+1)	Dr. S. L. Chawla
3.	Odd	FLA.503	Production technology of loose flowers	3(2+1)	Dr. S. L. Chawla
4.	Even	FLA.504	Landscaping and ornamental gardening	3(2+1)	Dr. Sudha Patil
5.	Odd	FLA.505	Protected floriculture	3(2+1)	Dr. Dipal S. Bhatt
6.	Even	FLA.506	Value addition in flowers	3(2+1)	Dr. Alka Singh
7.	Odd	FLA.507	Turfing and turf management	3(2+1)	Prof. A J Bhandari
8.	Even	FLA.508	CAD for outdoor and indoorscaping	3(2+1)	Dr. Dipal S. Bhatt
*Compulsory			**Sub-Total**	**24(16+8)**	
COMPULSORY NON-CREDIT COURSES					

1.	Odd	PGS 501	Library and Information Services	0+1	
2.	Even	PGS 502	Technical Writing and Communication Skills	0+1	Dr. S.N. Saravaiya
3.	Odd	PGS 503	Intellectual Property and its Management in Agriculture (e-Course)	1+0	Dr. Sanjeev Kumar
4.	Even	PGS 504	Basic Concepts in Laboratory Techniques	0+1	
5.	Odd	PGS 505	Agricultural Research, Research Ethics and Rural Development Programmes (e-Course)	1+0	
6.	Even	PGS 506	Disaster Management (e-Course)	1+0	
			Sub-Total	**6 (3+3)**	

LIST OF COURSES OFFERED BY THE DEPARTMENT (AS PER 4th DEANS' COMMITTEE)

:Ph. D. (Horticulture) - Floriculture & Landscape Architecture					
Sr. No.	**Sem.**	**Course No.**	**Title of Course**	**Credit hrs**	**Faculty**
1.	Odd	FLA 601	Advances in breeding of flower crops	3(2+1)	Dr. Akshay Patel
2.	Even	FLA 602	Advances in flower production technology	3(2+1)	Dr. S. L. Chawla
3.	Odd	FLA 603	Advances in protected and precision floriculture	2(1+1)	Dr. Alka Singh
4.	Even	FLA 604	Advances in landscape architecture	3(1+2)	Dr. Alka Singh
5.	Odd	FLA 605	Advances in biochemistry and biotechnology of flowers	3(2+1)	Dr. Diwakar Singh
**Compulsory			**Total**	**14(8+6)**	

Practical Manuals Published

Sr. No.	Course No.	Title of the Course	Academic Year
1.	FLR 1.1. and FLA 506	Text Book of Bonsai and Flower Arrangement	2008
2.	FLR 4.3	Fundamentals of Landscape Gardening	2009
3.	FLA 505	Protected Cultivation in Floricultural Crops	2009
4.		Pictorial Manual of Medicinal and Aromatic Plants	2010
5.	HWE 1.1	Practical manual Experiential learning programme in floriculture & vegetable crops	2012
6.	FLA 506	Floral Designs : Styles and Expression	2012
7.	FLA 503	Manual-Loose Flower Crops	2012
8.	FLA 502	Manual-Cut Flowers-	2013
9.	FLR 1.1	Manual-Ornamental Horticulture	2013

Activities under ELP

	Protected Cultivation of Hi-Value Horticultural Crops	
Year	Students	Revenue Generated (`)
2011-12	13	96974
2012-13	12	92745
2013-14	11	59126
2014-15	21	99891
2015-16	24	61005
2016-17	25	104905

ELP-Protected cultivation of High value flower crops (Rose)

Propagtion of ornanmental plants

Postharvest handling of rose

PG students presently enrolled in Doctoral Programme

Sr. No.	Name of PG Student	Registration No.	Title of the research programme	Name of Major Guide	Year of enrollment
1.	Hardik P. Shah (In Service)	04-1119-2011	Efficacy of Foliar Nutrients in Dendrobium Orchid cv. Sonia 17	Dr. Alka Singh	2011-12
2.	Mukesh A. Patel (In Service)	04-1117-2011	Assessment of genetic diversity and stability of African marigold (*Tagetes erecta* L.) under the south	Dr. S. L. Chawla	2011-12

			Gujarat conditions		
3.	Manish P. Ahir (In Service)	04-1116-2011	Suitability of some bulbous flowering crops to different salinity levels of irrigation water	Dr. Alka Singh	2011-12
4.	Chavan Sachin Keshav (In Service)	1020214004	Genetic improvement and DNA fingerprinting studies in *Adenium obesum* (Forssk.) Roem. & Schult.	Dr. Alka Singh	2014-15
5.	Dhruv Bhailal Kapadiya	1020214009	Plant Architecture and *in vivo* propagation protocol in *Euphorbia milii* for pot culture	Dr. Alka Singh	2014-15
6.	Gurjar Rashmikant	1020215003	Effect of media, nitrogen and phosphorus on growth and yield of rose cultivar Top Secret	Dr. S. L. Chawla	2016-17
7.	Patel Henaxi	1020216008	Standardization of production technology in potted Hibiscus var. Big Red Double	Dr. Alka Singh	2016-17
8.	Ahir Tejas	1020216001	To be allotted	Dr. S. L. Chawla	2016-17

PG students presently enrolled in Master Programme

Sr. No.	Name of PG Student	Registration No.	Title of the research programme	Name of Major Guide	Year of enrollment
1.	Raghuram Pawar	2020215052	Canopy management in *Jasminum sambac* var. Baramasi	Dr. Shivam T. Bhatt	2015
2.	Parmar Nilamben Gaiabhai	2020215036	Standardization of drying approaches for annual flowers of Asteraceae family	Dr. Sudha Patil	2015
3.	Gamit Dipika R.	2020216007	Integrated Weed Management in African marigold (*Tagetes erecta* L.)	Dr. G. D. Patel	2016
4.	Patel Rital J.	2020216025	Effect of spacing pinching on different varieties of annual chrysanthemum	Dr. Sandip A. Aklade	2016
5.	Naik Bhoomi P.	2020216019	Off Season flower induction through various stimulants in *Jasminum Sambac* L.	Dr. Shivam T. Bhatt	2016
6.	Desai Supal A.	2020216006	Effect of Plant growth enhancers on growth,	Dr. Bhavesh	2016

			Flowering and Yield of tuberose cv. 'Prajwal'	B. Patel	
7.	Vipul Patel	2020216026	Integrated Weed management in Tuberose	Dr. G. D. Patel	2016
8.	Kitty Rajan	2020216012	Effect of nitrogen and phosphorus on growth and flowering of cut chrysanthemum cv. Thai Chen Queen.	Dr. Dipal S. Bhatt	2016
9.	Meghalakshmi Guddad	2020216017	Effect of IBA, Rooting media and chemicals on rooting of cuttings and plant architecture of potted Ixora var. Mini Double"	Dr. Alka Singh	2016

Post Graduate Students Awarded Masters Degrees in the discipline of Floriculture

Sr. No	Name of Student	Registration No.	Title of the Thesis	Name of Major Guide	Year of Passing
1.	Avari Meherzad Noshir	04-5247-2002	Effect of nitrogen and phosphorous on plant growth and seed yield in balsam (*Impstiens balsamina* l.) Cv. "Double Pink"	Dr. J. R. Desai	2004
2.	Patel Mikesh Jagdish	04-5244-2002	Effect of nitrogen and phosphorus on yield in cosmos (*Cosmos sulphureus*) var. “Sunny orange”	Dr. J. R. Desai	2004
3.	WankhadeVishal Rajendra	04-5253-2002	Effect of plant growth regulators on growth, flowering and yield of tuberose (*Poliathes tuberosa* L.) cv. 'Double Local'	Dr. B. K. Dhaduk	2005
4.	Joshi Urjit Maheshkumar	04-5246-2002	Effect of nitrogen and phosphorus on plant growth, flowering and seed yield in Cock's comb (*Celosia argentia)* var. "Cristata"	Dr. J. R. Desai	2005
5.	Sunilakumari	04-0091-2004	*In vitro* studies in *Anthurium andreanum* hort.	DR. J. R. Desai	2006
6.	Shah Hardikkumar Pankajkumar	04-5583-2003	Effect of growth regulators on vegetative growth, flowering and yield of corms in gladiolus cv. American Beauty by soaking treatment	Dr. B. K. Dhaduk	2006
7.	Sudha Patil	04-5584-2003	Post harvest behavior of candytuft (*Iberis umbellate* L.) cut flowers as affected by harvesting stages, some	Dr. B. K. Dhaduk	2006

			chemical preservatives and colouring solutions		
8.	Jambhale Shruti Shripad	04-0016-2004	Studies on the effect of different micronutrients in tuberose cv. Local Double	Dr. B. K. Dhaduk	2006
9.	Naik Deepti Vinayak	04-0019-2004	Studies on the effect of different micronutrients in gladiolus cv. American Beauty.	Dr. B. K. Dhaduk	2007
10.	Dipal Bhailal Kapadiya	04-152-2005	Effect of bio-inoculants on growth & yield of african marigold (*Tagetes erecta* L.) variety Pusa Narangi Gainda	Dr. B. K. Dhaduk	2007
11.	Navale Makarand Uttam	04-155-2005	Infulence of plant growth regulators on growth, flowering and yield of chrysanthemum (*Dendrathema grandiflora* Tzvelev) cv. IIHR-6	Dr. J. R. Desai	2007
12.	Torawane Girish Madhukar	04-163-2005	Influence of wrapping material, storage temperature and duration on post harvest life of tuberose (*Polianthes tuberosa* L.) Cv. 'Local Double'	Dr. B. K. Dhaduk	2007
13.	Kolambe Suchit Balkrushna	04-257-2006	Effect of different organic manures and bio-fertilizers on growth, yield and quality of rose cv. Gladiator	Dr. B. K. Dhaduk	2008
14.	Parmar Jaydevsingh Jorubhai	04-261-2006	Effect of natural and chemical preservatives on quality and vase life of gladiolus (*Gladiolus psittacinus* hook.) cv. Psittacinus Hybrid.	Prof. R. B. Patel	2008
15.	Patil Harshadkumar Ratilal	04-0022-2004	Tissue culture plant and synthetic seed production of gladiolus variety American Beauty.	Dr. J. R. Desai	2009
16.	Lad Sanjaykumar Chimanlal	04-153-2005	Effect of natural, chemical preservative and beverages on vase life of cut tuberose (*Polianthus tuberosa* L.) Cv. Local double	Prof. R. B. Patel	2009
17.	Patel Bhavesh Bharatbhai	04-0262-2006	Influence of foliar application of nitrogen and growth regulators on growth, flowering and corm production of gladiolus cv. American Beauty	Dr. J.R. Desai	2008
18.	Patel Gaurang D.	04-263-2006	Effect of wrapping material and cold storage on post harvest life of spiderlily (*Hymenocallis littoralis* L.)	Mr. R.B. Patel	2008
19.	Ankita Hazarika	04-360-2007	Effect of potting media on growth and flowering of green house dutch rose (*Rosa hybrida*) cv. Naranga	Dr. B. K. Dhaduk	2009
20.	Joshi Aditi Chandrakant	04-367-2007	Flower induction in gladiolus cormels cv. Psittacinus Hybrid by application of growth regulators.	Dr. J. R. Desai	2009
21.	Makwana Rushabh Jilubhai	04-368-2007	Pulsing and cold storage techniques in rose	Dr. Alka Singh	2009

22.	Patel Truptibahen Rameshchandra	04-379-2007	Standardization of storage technology in gerbera (*Gerbera jamesonii* bolus ex. Hook)	Dr. Alka Singh	2009
23.	Ahir Tejaskumar Rambhai	04-435-2008	Integrated nutrient management in gladiolus (*Gladiolus grandiflorus* L.) cv. American Beauty.	Mr.R.B. Patel	2010
24.	Gurjar Rashmikant Anantray	04-445-2008	Standardization of foliar nutrients (NPK) spray in anthurium (*Anthurium andreanum* L.) Cv. Flame	Dr. B. K. Dhaduk	2010
25.	Pawar Vivek Bhagwat	04-456-2008	Studies of different chemicals on post harvest life of cut foliages of different ornamental species	Dr. B. K. Dhaduk	2010
26.	Rathod Dhirendrabhai Maheshbhai	04-461-2008	Effect of planting time and chemicals on the growth, flowering and yield of gladiolus (*Gladiolus grandiflorus*) cv. American Beauty	Dr. S. L. Chawla	2010
27.	Wagh Vishal Khushalrao	04-464-2008	Effect of bulb size and GA_3 on vegetative and floral characters of tuberose (*Polianthes tuberosa* L.) cvs. Prajwal and Calcutta Single.	Dr. S.L.Chawla.	2010
28.	Mangave Bahubali Dwarpal	04-449-2008	Post harvest management of heliconia inflorescence cv. Golden Torch	Dr. Alka Singh	2011
29.	Auty Yogesh Kakasaheb	04-436-2008	Standardization of harvesting stage and chemical treatments in orchid (*Dendrobium sp.*) cv. Sonia Red.	Dr. Alka Singh	2011
30.	Gaikwad Ashish Raghunath	04-443-2008	Micro propagation in carnation cv. Beaumonde Pink	Prof. R.B. Patel	2011
31.	Chavan Mahesh Chaitram	04-558-2009	Effect of plant growth regulators on growth and flowering of gerbera (*Gerbera jamesonii*) in polyhouse condition	Prof. R. B. Patel	2011
32.	Parolekar Sagar Sunil	04-573-2009	Response of biofertilizers and their combination with different levels of chemical fertilizers on tuberose (*Polianthes tuberosa* L.) Cv. Prajwal	Dr. S. L. Chawla	2011
33.	Ugale Hemant Bhanusaheb	04-585-2009	Standardization of dehydration technology for greenhouse cut rose	Dr. Alka Singh	2011
34.	Sahare Homaraj Anandrao	04-582-2009	Pre-storage pulsing, packaging and storage of tuberose (*Polianthes tuberosa* L.) Cv. Prajwal	Dr. Alka Singh	2011
35.	Baghele Rahul Dewaji	04-831-2010	Effect of foliar spray of growth regulators and cow urine on rose (*Rosa hybrida*) cv. Poison grown under naturally ventilated polyhouse	Dr B.K. Dhaduk	2012
36.	Nannavare Prashant Vyankat	04-372-2007	Influence of plant growth regulators on growth, flowering, yield and quality of flowers in Aster (*Callistephus chinensis* L.	Dr. J. R. Desai	2012

			nees.)		
37.	Chauhan Akshaykumar Popatlal	04-839-2010	Effect of nitrogen and phosphorus on growth, quality and flower production of golden rod (*Solidago canadensis* l.) Cv. Local	Prof. R. B. Patel	2012
38.	Jadeja Radhika Dilipsinh	04-844-2010	Post harvest biology and quality as influenced by different chemical treatments in tuberose (*Polianthes tuberosa* L.) Cv. Prajwal	Dr. Alka Singh	2012
39.	Kapane Jyotiling Popat	04-847-2010	Effect of different growing media and different levels of GA_3 on growth and flowering of anthurium (*Anthurium andrenum* L.) Cv. Tropical red under protected conditions	Dr. Alka Singh	2012
40.	Rami Mayank Hashmukhbhai	04-875-2010	Intergrated weed management in gladiolus (*Gladiolus grandiflorus*) var. American Beauty	Dr. S. L. Chawla	2012
41.	Sheth Sivangi Vijaybhai	04-878-2010	Pot culture management in rose cv. Valentine with the use of plant growth retardants under polyhouse condition	Dr. Alka Singh	2012
42.	Susan Mathew	04-881-2010	Comparative efficiency of foliar urea v/s neem oil coated urea on turfgrass performance	Dr B.K. Dhaduk	2012
43.	Chaudhari Urmil Chhotubhai	04-837-2010	Influence of various levels of nitrogen on growth and flowering parameters in rose under poly house condition	Dr. Alka Singh	2013
44.	Bhandari Ankitkumar Jagdishbhai	04-1061-2011	Effect of different growth regulators on vegetative propagation of *Hibiscus rosa-sinensis* L.	Prof. R B Patel	2013
45.	Jadav Sheetalben Kirtikumar	04-1075-2011	Effect of plant growth retardants on the growth, flowering and yield of heliconia (*Heliconia psittacorum*) var. Red torch under 50 per cent shade net condition	Dr. S. L. Chawla	2013
46.	Pavagadi Divyesh Chotubhai	04-1099-2011	Effect of different plant spacing and nitrogen levels on growth and yield of candyturf (*Iberis umbellate* L. cv. "Swiss White" under south Gujarat condition	Prof. R B Patel	2013
47.	Pooja Thatte	04-1100-2011	Management of cut foliage plants under water culture.	Dr. Alka Singh	2013
48.	Thatte Sumathi	04-1110-2011	Effect of different chemicals and natural preservative as a pre and post harvest spray on greenhouse rose cv. Samurai	Dr. Alka Singh	2013
49.	Kapadiya Dhruv Bhailal	04-1336-2012	Induction of variability through mutagenesis in chrysanthemum (*C. morifolium* Ramat.) varieties Jaya and Maghi	Dr. S. L. Chawla	2014
50.	Patel Dhwani Amritbhai	2020213025	Induction of variability in Gladiolus (*Gladiolus grandiflorus* L.) Varietyn 'Psittacinus Hybrid'	Dr. Sudha Patil	2015

			Using Physical and Chemical Mutagens		
51.	Roshni Agnihotri	2020213041	Performance of Various Turfgrass Genotypes Under South Gujarat Agro-climatic Condition	Dr. S. L. Chawla	2015
52.	Patel Nitalkumati Navnitkumar		Development of optimal frame work stratagies for cut rose (*Rosa hybrid* L.) in greenhouse condition	Dr. G.D. Patel	2015
53.	Patel Henaxi B.	2020213027	Effect of foliar application of micronutrients on growth and flowering of Rose cv. Top Secret under polyhouse condition.	Dr. Dipal S. Bhatt	2015
54.	Chaudhari Parmeshwari	2020213005	Standardization of holding solution on keeping quality and vase life of Torch Ginger [*Etlingera elatior* (Jack) R.M. Sm.]	Prof. R B Patel	2015
55.	Padhiyar Bipinkumar Manubhai	2020215033	Influence of different potting media on growth and flowering of pot chrysanthemum var. Ajina Purple	Dr. Dipal S. Bhatt	2017
56.	Parmar Swati Johnbhai	2020215037	Effect of bio-fertilizers on golden rod (Solidago Canadensis L.) cv. Local.	Prof. R. B. Patel	2017
57.	Patel Vaishaliben Dipakbhai	2020215047	Integrated nutrient management in African marigold (Tagetes erecta L.)	Dr. G. D. Patel	2017
58.	Patel Khaytikumari Mahendrabhai	2020215042	Standardization of drying technology for different annual flowers (Dianthus, annual chrysanthemum, china aster).	Prof. R. B. Patel	2017
59.	Parvathi Bennurmath	2020215038	Assessment of genetic diversity in chrysanthemum (chrysanthemum morifolium Ramat.)	Dr. Dipal S. Bhatt	2017
60.	Eerati Sathyanarayana	2020215019	Response of gladiolus (Gladiolus grandiflorus L.) cv. American beauty to integrated nutrient management.	Dr. Sudha Patil	2017
61.	Patel Unnatiben Rameshbhai	2020215045	Post harvest studies in different varieties of Heliconia	Dr. Sudha Patil	2017
62.	Patel Dishaben Kishor	2020215041	Effect of nitrogen and phosphorus on growth, flowering and yield of bird of paradise (Strelitzia reginae) Under Shade Net.	Dr. S. L. Chawla	2017
63.	Desai Maitri Yagneshchandra	2020215017	Management of *Cyperus rotundus* L. in Turf.	Dr. G. D. Patel	2017

Post Graduate Students Awarded Doctoral Degrees in the discipline of Floriculture

Sr. No	Name of PG Student	Registration No.	Name of Major Guide	Title of the Thesis	Year of Passing
1.	Paramveer Singh	04-157-2005	Dr. B. K. Dhaduk	Standardization of growing media for anthurium (*Anthurium andreanum* L.)	2009
2.	Sudha Patil	04-273-2006	Dr. B. K. Dhaduk	Gamma rays induced mutations in commercial varieties of gladiolus (*Gladiolus hybrida* L.)	2009
3.	Chaudhari Sachin Ratilal	04-254-2006	Dr. J. R. Desai	Influence of Bio-inoculants, FYM and inorganic fertilizers in Gladiolus (*Gladiolus grandiflorus* L.) Cv. American Beauty	2010
4.	Bhatt Shivam Tusharbhai	04-438-2008	Dr. J. R. Desai	Varietal assessment & variability study of gladiolus (*Gladiolus grandiflorus*) under south Gujarat condition	2011
5.	Dipal Bhailal Kapadiya	04-442-2008	Dr. B. K. Dhaduk	Varietal assessment and variability study in gerbera (G*erbera jamesonni bolus*) in naturally ventilated green house under south Gujarat conditions	2011
6.	Patel Gaurangkumar D.	04-452-2008	Dr. B. K. Dhaduk	Varietal assessment and variability study of (*Rosa hybrida*) in naturally ventilated greenhouse under south gujarat condition	2011
7.	Joshi Aditi Chandrakant	04-564-2009	Dr. B. K. Dhaduk	Post harvest study on gerbera (*Gerbera jamesonii*) cv. Stanza	2012
8.	Makwana Rushabh Jilubhai	04-568-2009	Dr. B. K. Dhaduk	Standardization of storage technology and improving storage life of different rose cultivars	2012
9.	Patel Bhaveshkumar Bharatbhai	04-574-2009	Dr. S.L. Chawla	Effect of irrigation levels and mulching on growth and yellow of tuberose (*Polianthes tuberosa* L.) Var. “Prajwal”	2013
10.	Priyanka Pankaj Prajapati	04-871-2010	Dr. Alka Singh	Morphological, physiological, biochemical and molecular variability study in different varieties of gerbera (*Gerbera jamesonii* bolus) grown under polyhouse	2013
11.	Bahubali Mangave	04-1084-2011	Dr. S.L. Chawla	Standardization of post harvest technology of spiderlily (*Hymenocallis littoris* L.) for distant market	2014
12.	Homraj Sahare	04-1357-2012	Dr. Alka Singh	Varietal assessment of anthurium in greenhouse	2015

				under south gujarat condition	
13.	Neelima Palagani	04-871-2010	Dr. Alka Singh	Morphological, physiological, biochemical and molecular variability study in different varieties of gerbera (*Gerbera jamesonii*) grown under polyhouse	2016

Post Graduate Students who have cleared NET in the Discipline of Floriculture & Landscape Architecture

Sr. No.	Name	Year
1.	Shivam Bhatt	2010
2.	Dipal Bhatt	2010
3.	Gaurang Patel	2010
4.	Yogesh Auty	2011
5.	Rashmikant Gurjar	2011
6.	Radhika Jadeja	2013
7.	Bahubali Mangave	2013
8.	Rishabh Makwana	2013
9.	Sumathi Thatte	2013
10.	Pooja Thatte	2013
11.	Divyesh Pavagadhi	2013
12.	Sheetal Jadhav	2013
13.	Homraj Sahare	2013
14.	Dhiren Rathod	2013
15.	Mayank Rami	2013
16.	Aditi Joshi	2013
17.	Neelima Palagani	2013
18.	Rahul Baghele	2013
19.	Ankit Bhandari	2014
20.	Kapadiya Dhruv B.	2015
21.	Dhwani Patel	2015
22.	Henaxi Patel	2015
23.	Parmeshwari Chaudhari	2015
24.	Vivek Pawar	2015
25.	Roshni Agnihotri	2015
26.	Patel Vaishaliben Dipakbhai	2017
27.	Patel Unnatiben Rameshbhai	2017
28.	Petel Dishaben kishorbhai	2017
29.	Patel Khyatikumari Mahendrabhai	2017

30.	Desai Maitri Yagneshbhai	2017
31.	Parvathi Bennurmath	2017
32.	Erathi Sathyanarayan	2017
33.	Parmar Swati Johnbhai	2017
34.	Raghuram Pawar	2017
35.	Padhiyar Bipinsinh M	2017
36.	Utsav Devdhara	2017
37.	Ahir Tejas	2017
38.	Patel Mukund	2017

Medalist Students of the Department

Sr. No.	Name of student	Year
ASPEE Foundation Gold Plated Silver Medal M. Sc. Horticulture		
1.	Ugale Hemant	2011-12
2.	Radhika Jadeja	2012-13
3.	Roshni Agnihotri	2015-16
ASPEE Foundation Gold Plated Silver Medal for Ph. D. Horticulture		
1.	Priyanka Prajapati	2012-13
SRF		
1.	Roshni Agnihotri	2016
2.	Parvathi Bennurmath	2017
3.	Erathi Sathyanarayan	2017

Coaching Classes

Year	Coaching classes for JRF/SRF/NET	Period	Faculty Member
2011-13	NET	October –November and April –May,	Dr. Alka Singh, Dr S L Chawla, Mr H P Shah, Mr M A Patel
2014-16	NET	October –November and April –May	Dr. Alka Singh, Dr S L Chawla, Mr H P Shah, Mr M A Patel, Dr Sudha Patil, Dr Dipal Bhatt
2017	NET	April –May	Dr. Alka Singh, Dr S L Chawla, Mr H P Shah, Mr M A Patel, Dr Sudha Patil, Dr Dipal Bhatt

Skill Development in Students



Student activities – Landscaping, Ornamental pot filling and transplanting


Bio wall making

Rockery


Dish gardening

Landscape Models




Skill Imparting-Value Addition in Flowers

RESEARCH ACTIVITIES

Focus Areas

- Production technology of flower crops in open field
- Production technology of flower crops under protected cultivation
- Varietal evaluation of different flower crops
- Soilless cultivation of Ornamental crops
- Potted Ornamentals
- Value addition through dry flower technology
- Post harvest handling of flowers
- Crop improvement in different flower crops

Schemes in Operation

Sr. No.	Name of Research Project & BH number	Budget Head	Year of Commencement	PI & Co-PI	Scheme
1.	Establishment of Research Project on Floriculture	12046 – 1	1998-99	PI : Dr. S. L. Chawla Co-PI : Prof. M A Patel Dr. Dipal Bhatt	Plan
2.	Establishment of Practical Training Centre of Horticulture Students for the Hi-tech Horticulture	12970	2004-05 Cont.	PI : Dr. Alka Singh Co-PI : Prof. H. P. Shah	Plan
3.	Advanced Technology Centre for Soilless System for Production of Various Crops	12041	2014-2015	PI : Dr. Alka Singh Co-PI : Prof. Ankit J. Bhandari	Plan
4.	Landscaping and Gardening Training Programme (*Mali Talim*)	12508	1998-99	Prof. H. P. Shah	Plan
5.	Model Nursery for Ornamental plants	9510 N - 50 : (R F)	2007-08	Prof. R. B. Patel	NHM
6.	ELP on Hi- Tech Protected Cultivation of Horticultural Crops	9510 N- 60 (RF)	2008-09 (One time grant)	PI : Dr. Alka Singh	ICAR
7.	Certificate Course in Turfgrass Management	9510- N - 83	2015-16	PI: Dr. S. L. Chawla Co-PI: Prof. M. A. Patel Prof. H. P. Shah	Self-financed
8.	AICRP on Floriculture		2015	PI: Dr. S. L. Chawla Co-PI: Dr. Dipal Bhatt	ICAR

1. Establishment of Research Project on Floriculture (BH: 12046 – 1)

Objectives:

- Collection, maintenance and evaluation of germplasm of ornamental crops
- Introduction of new flower crops;
- Crop improvement Standardization of agro techniques.

2. Establishment of Practical Training Centre of Horticulture Students for the Hi-tech Horticulture (BH: 12970)

Objectives:

- To give training in the UG & PG students for hi tech horticulture.

3. Advanced Technology Centre for Soilless System for Production of Various Crops (BH: 12041)

Objectives:

- To Standardize Soilless cultivation technology for flower crops.
- To Obtain best quality flowers under soilless system.
- To develop grafting technology in various crops for quality production.
- To impart training to UG & PG Students on different aspects of hydroponics technology in various horticultural crops.

4. Landscaping and Gardening Training Programme (Mali Talim) (BH: 12508)

Objectives:

- To impart training for the skilled Gardener.

5.Model Nursery for Ornamental plants (BH: 9510 N - 50 : (R F))

Objectives:

- Multiplication and maintenance of different flower crops.
- To develop production technology for high value and other flower crops.
- Strengthening of P.G. research

6. ELP on Hi- Tech Protected Cultivation of Horticultural Crops (BH: 9510 N - 60 : (R F))

Objectives:

- To train the students through experiential learning in crop management under protected cultivation of gerbera and rose cut flowers and their post harvest handling and value addition
- To develop entrepreneurship skill in the students

7. Certificate Course in Turfgrass Management (BH: 9510- N - 83)

Objectives:

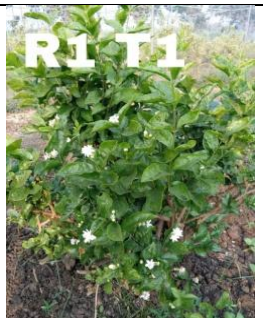
- Develop professional skill in field of turfgrass management

8. AICRP on Floriculture (yet to be alloted)

Objectives:

- Crop improvement; Development of package and practices for flower crops; value addition in floriculture.

Overview of Research Trials



Integrated nutrient management in rose

Off season flowering in Jasmine

New initiatives

: Research Recommendations:

A) Production Technology & Flower in open field

1. Tuberose

(A) The tuberose crop cv. Double should be grown at distance of 45 x 15 cm and manured @ 50 FYM/ha as a basal dose.

(B) The farmers cultivating tuberose are advised to grow tuberose improved variety Prajwal among single type and variety Suvasini among double type for quality cut flower production to get 171.22% and 127.29% higher net realization, respectively over local single and double varieties.

(C) Farmers cultivating tuberose are advised to grow bulbs on raised bed of 90 cm width and 15 cm height in 3 rows along with 15 ton FYM/ha/year +. RDF 300-200-100 Kg N, P_2O_5, K_2O / ha. (application of nitrogen in four equal splits at 3 months interval per year) for qualitative as well as quantitative spike production up to three years after planting.

2. Gaillardia

(A) Gaillardia should be planted at 30 x 30 cm or 45 x 30 cm and should be fed with basal dose of FYM @ 14 t/ha. Crop should be fertilized with 80 kg N; 60 kg P and 60 kg K per hectare. Half dose of N and full dose of P and K should be applied at transplanting time and remaining half dose of N should be applied after one month of transplanting.

3. Marigold

(A) African marigold cv. African Giant should be transplanted in third week of September and should be fed with 150 kg N/ha i.e. held at transplanting time and half at one month after transplanting.

(B) Marigold growers are advised to apply 200kg N/ha in two equal splits at basal and at the pinching time which should done 30 days after transplanting. The P and K each @ 50 kg/ha and FYM @ 15 t/ha should be applied as basal.

(C) French marigold seedlings should be transplanted in first week of July to first week of August for higher flower production, better quality and economic return.

(D) African marigold seedlings should be transplanted in first week of July to first week of August for higher flower production, better quality and economic return.

4. Rose

(A) Rose cv. Gladiator and Shew Berry Shows are found superior to other varieties for good quality cut flower production.

5. Spider lily

(A) Spider lily growers are advised to plant the crop at 75 x 30 cm and fertilized it with 200 kg N/ha in four equal splits i.e. at basal and at 3 months interval thereafter the P and K @ 200 kg/ha and FYM @ 20 t/ha should be applied in the beginning of monsoon.

(B) Spider lily growers are advised to fertilize spider lily crop with 30 t FYM + 300 kg nitrogen + 225 kg phosphorus per hectare per year. FYM should be applied in June while nitrogen and phosphorus should be applied in four equal splits at three months' interval during June, September, December and March.

(C) Farmers of south Gujarat heavy rainfall zone I (AES-III) growing spider lily are advised to cut the leaves in 1st week of May and subsequently apply 13-00-45 (NPK) @ 1.5 % (15 g/l) through foliar application as first spray when plant attain 30-45 cm height after de-leafing and second spray 15 days after first foliar application along with recommended dose of fertilizers (300:225:200 kg NPK/ha) for getting higher production of flower buds as well net realization. (2016-17)

6. Jasmine

(A) The farmers are advised to plant Mogra (*Jasminum sambac*) at 1 x 1 m distance and fertilized with 150 g N/plant along with 5 kg FYM 60 g P and 60 g K per plant.

(B) The flower growing farmers are advised to grow long budded double flowered Barmasi Mogra for 44.53 % higher flower production as compared to single type Deshi Local variety (Local check).

7. Chrysanthemum

(A) Flower growers are advised to grow chrysanthemum variety Ratlam Selection (white) which has higher market demand due to white colour and good quality. Moreover, there is market demand for yellow and red colour which can be met by growing Red Gold (red) and CS-16 (yellow) varieties which produce better quality

flowers.

		
	Red Gold (red)	CS-16

8. Gladiolus

(A) The farmers cultivating flower crops are advised to grow Gladiolus variety Sancerre (white) for qualitative as well as quantitative cut spike production. However, if the farmers wish to grow other coloured varieties according to market demand, varieties like Punjab Dawn (peach with red throat), Pricilla (whitish pink), Shagun (cream) Psittacinus Hybrid (Saffron with yellow throat), Gunjan (light peach), and American Beauty (pink) are also recommended for quality flower production.

(B) The farmers growing gladiolus are advised to dip gladiolus corms in microbial consortium solution (10 ml /l water) for one hour and dry under shade then use for planting. Apply 75 % of RDF (150-150-150 kg NPK / ha.), P and K as basal N in two equal splits at 15 days and 45 days after planting which reduce 25 % fertilizers cost and gives higher realization.

(C) The farmers of South Gujarat growing gladiolus are advised to spray Pendimethalin as pre-emergence herbicide @ 0.75 kg ha-1 (one day after first irrigation) + one HW at 50 DAP or follow hand weeding at 25, 50, 75 DAP for effective weed control and getting higher net realization and quality flowers.

					
Sancerre	Punjab Dawn	Pricilla	Shagun	Psittacinus Hybrid	American Beauty

B) Production Technology & Cut Flower and protected cultivation

1. Rose

(A) Rose cv. Gladiator cultivator are advised to grow the rose plants under 50% shade net and treat the plant with 3/4th dose of nitrogen (56.25 g N/plant) + 2g Azotobacter + foliar spray of BA 100 mg l^{-1} for getting better quality flower and higher economic return during both the winter and summer seasons. *Azotobacter* should be applied just after pruning. Nitrogen should be applied in two equal splits i.e. 7 days after pruning and 1 month after 1st dose. Foliar spray of BA 100 mg l^{-1} should be given 15 days after pruning. Common dose of P and K each at 25 g/plant and FYM 5 kg/plant should also be applied 7 days after pruning. The net should be removed in monsoon every year.

(B) The farmers cultivating roses under naturally ventilated poly-house are advised to grow Passion and First Red varieties for better quality and more yield.

2. Gerbera

(A) The farmers growing gerbera under naturally ventilated greenhouse are advised to grow Mademoiselle and Dream varieties for higher yield with better quality and higher economic returns.

3. Heliconia

(A) Farmers are advised to harvest heliconia flowers (spike) cv. Golden Torch at three bracts open stage for quality production. Further, florists (wholesalers and retailers) are also advised to spray GA3 100mg/l or BSA 50mg/l one day after harvest (two times at alternate day) to enhance vase life by almost double (two weeks) and better quality in terms of colour and freshness.

(B) The farmers of South are advised to grow *Heliconia stricta* variety Iris Bannochie (red) for qualitative as well as quantitative cut spike production. In addition, if the farmers wish to cultivate varieties with different colours and forms, according to market demand, varieties like Parrot Beak (red with yellow edges), Lobster Claw-II (orange-red), Pedro Ortiz (cherry red), *H. wagneria* "Red" (red), Orange (crimson) and Golden Torch (yellow) are also recommended for quality flower production. Heliconia produces good quality flowers up to three years after planting under 50% green shade net.

			
Golden Tourch	**Red Tourch**	**Irish Benochii**	**Orange**

C) Post harvest Technology & Value addition in flowers

1. Tuberose

(A) The tuberose growers are advised to adopt colouring technique by using edible dyes in tuberose for inducing different colours as value addition. Thus, the treatment of immersion in edible dyes *viz*., carmosine red, sunset yellow and tetrazine blue solution at 0.3% concentration (3 g/l water) for 1 hour in tuberose cut spikes impart different shades of red, yellow and blue. Further, the vase solution treatment of 8-HQ at 300 ppm (300 mg/l) + 4% sucrose (40 g/l) improves floret opening and vase life.

2. Rose

(A) Growers of Dutch Rose are advised to store using dry storage method with PP packaging (24 microns) for maintaining post storage quality and vase life. Using this technique cut roses can be stored for a period of 10 days without any deterioration in flower quality and flower opening as compared to wet storage.

3. Golden rod

(A) The flower growers of Gujarat are advised to harvest golden rod panicles at fully mature unopened harvest stage to obtain better vase life. Further, the vase solution treatment of 0.02 % 8-HQ (200 mg/l) with 2 % sucrose (20 g/l) can be used to further improve the overall flower quality and vase life up to 11 days.

For Enterpreneurs/Women Groups/Cottage based industries

Technology of Flower Drying

People interested in cottage industry based on dry flowers are advised to dry roses of variety Top Secret and Gold Strike using silica gel (60-120 mesh size) embedding method (850 g silica for 10 flowers) either with Microwave Oven (900 Watts, 30 L capacity, 1 day –drying time) or under room condition (7 days-drying time) to obtain good quality dry flowers having storage life of about 120 days.

Dry Roses

Production of planting material

Year:2016-17	
Particulars (Planting material)	**No. of plants**
Ornamental plants	1265
Shrub & Climber	3600
Medicinal plants	1945
Palm	92
Trees	227
Ornamental ginger	104
Border plants	143
Rooted plants	1926
Rose	150
Tuber/corms	88
Cycus	2

Development of Green Aesthetics in College

Ikebana

College Landscaping

Roof Top garden

<table>
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<tr><td colspan="2">Bio wall</td><td>Fresh Floral Rangoli</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Sand Garden</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Strolling Garden</td></tr>
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TRANSFER OF TECHNOLOGY (ToT)

National Seminar-
Awareness and Promotion of Dry Flower Exports and Industry in Gujarat, July 11, 2017

Exhibition -Dry Flowers, July 11, 2017

Global Conference on Technology challenges and Human Resources for Climate Smart Horticulture, Year 2014

Winter School on Current Trends in Commercial Horticulture, December 1-21, 2013

Certificate Course-Turf Grass Management (Inauguration), 2015

Agriculture Fair, Vyara, 2012

Ornamental plant Exhibition cum Sale, 2017

Resource persons in workshop and winter school

School awareness

National workshop on Floral craft and Flower exhibition, Year 2012

	
National workshop on Urban and Peri Urban Horticulture, Year 2013	**Flower Arrangement Exhibition, 2012**
	
Value addition in Flower crops (State level seminar and Flower Show), Year 2015	celebration of **Women Empowerment Fortnight (1st August 2015 to 14th August 2015)**

Infrastructure Available

Department

- Well equipped Laboratories (3) and class rooms
- PTC of Hi-tech Horticulture:
    - Combo Polyhouse with Fan and Pad cooling system – 02 (rose and anthurium)
    - Naturally ventilated poly house – 02 (Gerbera and other ornamentals)
    - Net house : 02 (anthurium and indoor plants)
- ATC for Soilless system (ATCSS):
    - Combo Polyhouse with Fan and Pad cooling system – 01 (Adenium hybrids)
    - Naturally ventilated poly house – 01 (*Euphorbia milli* and other ornamentals)

Farm

- Floriculture research farm in 4 ha land
- Model nursery for ornamental plants
- Naturally ventilated poly house – 01
- Net house - 05

Dignitaries Visit: Glimpses

Sh. Sanjay Prashad, Principal Secretary (Agriculture), GoG, Gandhinagar and Dr. C. J. Dangaria, Hon. Vice-Chancellor, NAU, Navsari

Dr. K. V.Prasad, Director, ICAR-Directorate of Floriculture Research, Pune

Rotary Club members, Advance Training Centre Soilless system of various crops,

Dr. R. K. Singh, ADG (Crop Sci.) with Dr. C. J. Dangaria , Hon. VC, Dr. B. N. Patel, Principal and Dean, ACHF

Shri Babubhai Bokhiriya, Agriculture Minister

Dr. J. S. Sandhu, ADG (Crop Science) and Dr. B.N. Patel, Dean & Principal, ACHF, NAU