NAVSARI AGRICULTURAL UNIVERSITY

DEPARTMENT OF VEGETABLE SCIENCE

ACTIVITIES AND ACHIEVEMENTS

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	VEG 1.1	Tropical and Subtropical Vegetables	3 (2+1)	Dr. D. R. Bhanderi
2.	III	VEG 3.2	Temperate Vegetable Crops	2 (1+1)	Dr. D. R. Bhanderi
3.	III	VEG 3.3	Precision Farming and Protected Cultivation	3 (2+1)	Dr. Sanjeev Kumar
4.	IV	VEG 4.4	Spices and Condiments	3 (2+1)	Prof. J.M. Vashi
5.	V	VEG 5.5	Potato and Tuber crops	2 (1+1)	Dr. S.N. Saravaiya & Dr. K.D. Desai
6.	V	VEG 5.6	Breeding of Vegetable, Tuber and Spice Crops	3 (2+1)	Dr. K.S. Mungra
7.	VI	VEG 6.7	Seed Production of Vegetable, Tuber and Spice Crops	3 (2+1)	Dr. N.K. Patel
			Sub-Total	**19 (12+7)**	
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 & Dr. Sanjeev Kumar
		HWE:7.1.2	Packaging and Marketing of High Valued Horticultural Crops	4 (0+4)	Dr. N.B. Patel & Mr. H.P. Shah
Model No. 2		**HWE 7.2**	**Commercial Production of Horticultural Planting Materials**	**10 (0+10)**	
		HWE: 7.2.1	Propagation and	6 (0+6)	Dr. N.K. Patel &

			Production of Propagules		Dr. C.R. Patel
		HWE: 7.2.2	Packaging and Marketing of planting materials	4 (0+4)	Dr. K.D. Desai & Dr. B.M. Tandel
STUDENT READY-II: Rural Horticultural Work Experience					
1.	VIII	HWE. 8.4 (RHWE)	University farms (AAU) and Visit to Horticulture Based Industries of Middle Gujarat Region	4 (0+4)	Dr. G.D. Patel Dr. S.Y. Patel
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.	II	VEG. 2.1	Tropical and Sub-tropical Vegetables	3 (2+1)	Dr. D.R. Bhanderi
2.	III	VEG. 3.2	Temperate Vegetables	2 (1+1)	Dr. D.R. Bhanderi
3.	IV	VEG. 4.3	Spices and Condiments	3 (2+1)	Prof. J.M. Vashi
4.	V	VEG. 5.4	Breeding of Vegetable, Tuber and Spice Crops	2 (1+1)	Dr. K.S. Mungra
5.	V	VEG. 5.5	Potato and Tuber crops	2 (1+1)	Dr. S.N. Saravaiya & Dr. K.D. Desai
6.	VI	VEG. 6.6	Seed Production of Vegetable, Tuber and Spice Crops	3 (2+1)	Dr. N.K. Patel
7.	VII	HWE: 7.2	Protected Cultivation of Hi-Value Vegetable Crops	10 (0+10)	
7 a.		HWE:7.2.1	Orientation, Project Formulation, Lay out and Planning	2 (0+2)	Dr. Sanjeev Kumar
7 b.		HWE:7.2.2	Production of Hi-Valued Vegetable Crops	6 (0+6)	Dr. N.B. Patel
7 c.		HWE: 7.2.3	Packaging and Marketing of Vegetables	2 (0+2)	Prof. J.M. Vashi
7.		HWE: 7.4	Vegetable Seedling Nursery	10 (0+10)	
7 A		HWE: 7.4.1	Orientation, Project Formulation, Lay out and Planning	2 (0+2)	Dr. D.R. Bhanderi
7 B		HWE: 7.4.2	Production of Vegetable Seedlings	6 (0+6)	Dr. N.K. Patel
7 C		HWE: 7.4.3	Packaging and Marketing of Vegetable Seedlings	2 (0+2)	Dr. K.D. Desai
8.	VIII	HWE. 8.3 (RAWE)	University farms (AAU) and Private Horticultural Field visit of Middle Gujarat region	4 (0+4)	Dr. G.D. Patel Dr. S.Y. Patel
Total				**39(9+30)**	

LIST OF COURSES: AS PER 4TH DEANS' COMMITTEE

M. Sc. (Horticulture)-Vegetable Science

Sr. No.	Semester	Course No.	Title of Course	Credit hrs	Faculty
1.	Odd	VSC 501*	Production Technology of Cool Season Vegetable Crops	3 (2+1)	Dr. N.B. Patel
2.	Even	VSC 502*	Production Technology of Warm Season Vegetable Crops	3 (2+1)	Dr. N.B. Patel
3.	Odd	VSC 503*	Breeding of Vegetable Crops	3 (2+1)	Dr. K.N. Chaudhari
4.	Even	VSC 504*	Growth and Development of Vegetable Crops	3 (2+1)	Prof. Kirti Bardhan
5.	Odd	VSC 505	Seed Production Technology of Vegetable Crops	3 (2+1)	Dr. Sanjeev Kumar
6.	Even	VSC 506	Systematics of Vegetable Crops	2 (1+1)	Dr. S.N. Saravaiya
7.	Odd	VSC 507	Production Technology of Underexploited Vegetable Crops	2 (1+1)	Dr. D.R. Bhanderi
8.	Even	VSC 508	Organic Vegetable Production Technology	2 (1+1)	Dr. K.G. Patel
9.	Odd	VSC 509	Fundamentals of Processing of Vegetables	3 (2+1)	Er. A.K. Senapati
10.	Even/Odd	VSC 591	Master's Seminar	1 (1+0)	Major Guide
11.	Even/Odd	VSC 599	Master's Research	20	Major Guide
*Compulsory			**Sub-Total**	**45(16+29)**	
COMPULSORY NON-CREDIT COURSES					
1.	Odd	PGS 501	Library and Information Services	0+1	Dr. K.D. Tandel
2.	Even	PGS 502	Technical Writing and Communication Skills	0+1	Dr. D.J. Chaudhari
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	Dr. K.G. Patel
5.	Odd	PGS 505	Agricultural Research, Research Ethics and Rural Development Programmes (e-Course)	1+0	Dr. Narendra Singh
6.	Even	PGS 506	Disaster Management (e-Course)	1+0	Dr. S.V. Viyol
			Sub-Total	**6 (3+3)**	
			Total	**51 (19+32)**	

LIST OF COURSES: AS PER 4TH DEANS' COMMITTEE

:Ph. D. (Horticulture) -Vegetable Science:					
Sr. No.	**Sem.**	**Course No.**	**Title of Course**	**Credit hrs**	**Faculty**
1.	Odd	VSC 601**	Advances in Vegetable Production	3 (2+1)	Dr. S.N. Saravaiya
2.	Even	VSC 602**	Advances in Breeding of Vegetable Crops	3 (2+1)	Dr. K.N. Chaudhari
3.	Odd	VSC 603**	Protected Cultivation of Vegetable Crops	2 (1+1)	Dr. N.B. Patel
4.	Even	VSC 604**	Biotechnology in Vegetable Crops	3 (2+1)	Dr. C.V. Kapadia
5.	Odd	VSC 605	Seed Certification, Processing and Storage of Vegetable Crops	3 (2+1)	Dr. D.R. Bhanderi
6.	Even	VSC 606	Abiotic Stress Management in Vegetable Crops	3 (2+1)	Prof. Kirti Bardhan
7.	Even/ Odd	VSC 691	Doctoral Seminar - I	1 (1+0)	Major Guide
8.	Even/ Odd	VSC 692	Doctoral Seminar - II	1 (1+0)	Minor Guide
9.	Even/ Odd	VSC 699	Doctoral Research	45	Major Guide
**Compulsory			**Total**	**64(13+51)**	

Practical Manuals Published

Sr. No.	Course No.	Title of the Course	Academic Year
1.	VEG 2.1	Tropical and Subtropical Vegetables	2011-12
2.	VEG 3.2	Temperate Vegetables	2011-12 & 2015-16
3.	VEG 5.5	Potato and Tuber Crops	2011-12 & 2015-16
4.	VEG 4.3	Spices and Condiments	2013-14
5.	VEG 5.4	Breeding of Vegetable, Tuber and Spice Crops	2013-14
6.	VSC 506	Systematics of Vegetable Crops	2017-18
7.	B.Sc. 2.5	Principals of Plant Breeding	2017-18

Activities under ELP

	Protected Cultivation of Hi-Value Horticultural Crops		Commercial Production of Horticultural Crops	
Year	Students	Revenue earned Total Profit (Rs.)	Students	Revenue earned Total Profit (Rs.)
2012-13	12	118208	10	94129
2013-14	11	44009	12	65561
2014-15	21	74511	25	16828
2015-16	24	54205	26	95787
2016-17	25	94160	25	55320
2017-18	28	126662	06	107427



Vegetable nursery raising in plug-trays: Hi-Tech Horticulture



Training water melon, tomato, cucumber vertically under NVPH



Grafting brinjal onto wild rootstock (An Eye Catching Activity)



Exposure Visit of EL students to CoE on Vegetables-Vadrad (Prantij)


Exposure of students to Nursery raising techniques


Practical learning in Students of ELP on marketing of vegetable seedlings


Practical learning in Students of ELP on plug-tray nursery raising


Training greater yam vertically under naturally ventilated polyhouse


Cultivation of leafy vegetables under naturally ventilated polyhouse


Harvesting, grading and packing of leafy vegetables

PG students enrollment in Master Programme

Sr. No.	Name of Student	Registration No.	Title of the research programme	Major Guide	Year of enrollment
1.	Pankajkumar Dharva	2020215034	Genetic architecture of fruit yield and its attributes in Tomato (*Solanum lycopersicum* L.)	Dr. A.I. Patel	2015-16
2.	Rathod Himanshu	2020215024	Effect of paired row planting and mulching on growth, yield and quality of tomato *(Solanum lycopersicum* L.*)* under drip system	Dr. S. Y. Patel	2015-16
3.	Punna Samatha Sree (ICAR-General Seat)	2020216028	Effect of chemicals on growth, yield and quality of elephant foot yam	Dr. K. D. Desai	2016-17

			[*Amorphophallus paeoniifolius* (Dennst.) Nicolson]		
4.	Narasimhamurthy PN (ICAR-General Seat)	2020216021	Morphological, biochemical and molecular characterization of sweet potato (*Ipomoea batatas* (L.)Lam.) genotypes	Dr. N.B. Patel	2016-17
5.	Avisha Ram Budhani	2020216001	Effect of soil and foliar applied Fe on yield and quality of cowpea (*Vigna unguiculata* (L.) Walp.)	Dr. D. R. Bhanderi	2016-17
6.	Goswami Rahulpuri Ashokpuri	2020216008	Evaluation of sowing dates and varieties of vegetable Amaranthus (*Amaranthus spp.*)	Dr. V. K. Parmar	2016-17
7.	Hiral Chaudhari	2020216010	Response of different weed management practices on growth and yield of tomato (*Solanum lycopersicum* L.) cv. GT 2	Dr. S.Y. Patel	2016-17
8.	Anjali Patel	2020216022	Effect of different types of mulches on growth, yield and quality of okra (*Abelmoschus esculentus* {L}. Moench.) cv. GAO-5	Dr. S.S. Masaye	2016-17
9.	Krishna Chotaliya	2020216005	Effect of different levels of nitrogen and novel organic liquid fertilizer on growth, yield and quality of okra (*Abelmoschus esculentus* (L.) Moench).	Dr. S.S. Masaye	2016-17

10.	Adarsh Guddadamath	2020217001	Effect of foliar application of Zinc and Iron on growth, yield and quality of cucumber (*Cucumis sativus* L.)	Dr. D.R. Bhanderi	2017-18
11.	Gadhiya Dhara Pravinbhai	2020217008	Influence of growth regulators on growth and yield attributes of cauliflower	Dr. N.K. Patel	2017-18
12.	Goswami Mayurgiri Jagdishgiri	2020217011	Integrated nutrient management in vegetable amaranthus *(Amaranthus spp.*) under the south Gujarat conditions	Dr. V.K. Parmar	2017-18
13.	Manani Nishant Prafulkumar	2020217015	Integrated nutrient management in cluster bean [*Cyamopsis tetragonoloba* (L.) Taub]	Dr. V.K. Parmar	2017-18
14.	Modi Shivani Rajendra	2020217016	Effect of Nano-NPK fertilizers on various growth, yield and quality parameters of greenhouse cucumber	Dr. Sanjeev Kumar	2017-18
15.	Parmar Manishkumar Narsinhbhai	2020217018	Effect of organic spray on growth, yield and quality attributes of tomato (*Solanum lycopersicum* L.) under South Gujarat condition	Dr. S.Y. Patel	2017-18
16.	Patel Jesalben Rajeshbhai	2020217021	Effect of Silicic Acid and Novel Organic Liquid Fertilizer on growth, yield and quality parameters of greenhouse tomato	Dr. Sanjeev Kumar	2017-18
17.	Shah Smit	2020217032	Response of sweet	Dr. K.D.	2017-18

	Bhartiben		potato [*Ipomoea batatas* (L.) Lam] to Novel organic liquid fertilizer	Desai	
18.	Vasava Chetana Kanubhai	2020217037	Effect of spacing and foliar spray of micronutrients on cluster bean (*Cyamopsis tetragonaloba* (L.) Taub)	Dr. N.K. Patel	2017-18

PG students enrollment in Doctoral Programme

Sr. No.	Name of Student	Registration No.	Title of the research programme	Major Guide	Year of enrollment
1.	Vashi Jimi Manharbhai (In-Service)	1020214017	Response of Greater Yam (*Dioscorea alata* L.) to different growing conditions	Dr. S.N Saravaiya	2014-15
2.	Patel Krishna Dhirajlal	1020214011	Study of heterosis, combining ability and stability for yield and quality traits in Tomato (*Solanum lycopersicum* L.)	Dr. A.I. Patel	2014-15
3.	Patel Himani Biharilal	1020215011	Response of Cluster bean [*Cyamopsis tetragonoloba* (L.) Taub.] to foliar application of PGRs	Dr. S.N Saravaiya	2015-16
4.	Kalariya Vijaysinh Dhanjibhai	1020215004	Response of foliar application of micronutrients, novel organic liquid fertilizer and sea weed extract on okra [*Abelmoschus 10 belmoschu* (L.) Moench].	Dr. D.R. Bhanderi	2015-16
5.	Ganta Koteswara Rao (ICAR Seat – Regular)	1020216003	Morphological, biochemical and molecular characterization in Greater yam (*Dioscorea alata* L.).	Dr. N.B. Patel	2016-17
6.	Chaudhari Vishvas	1020217005	Effect of exogenous application of Novel	Dr. N.B. Patel	2017-18

	Jitubhai		organic liquid fertilizer, Seaweed extract and Ascorbic acid in Tomato for horticultural traits under polyhouse conditions		
7.	Sheth Sachin Gautamkumar	1020217011	Response of cowpea (*Vigna unguiculata* L. Walp.) to Fertilizers, Bio-Inoculants and Organic Liquid Fertilizers	Dr. D.R. Bhanderi	2017-18
8.	Velamala Sravani	1020217013	Onion (*Allium cepa* L.) response to Plant Bioregulators	Dr. S.N. Saravaiya	2017-18

Post Graduate Students Awarded Masters Degrees in the discipline of Vegetable Science

Sr. No	Name of Student	Registration No.	Title of the Thesis	Major Guide	Year of Passing
1.	Patel Girish Sharadbhai	4-4034-97	Effect of graded levels of nitrogen and spacing on growth and yield of chilli (*Capsicum annuum* L.)	Dr. M. N. Patel	2000
2.	Kesang Lachungapa	4-4247-2000	Effect of nitrogen, phosphorus and potassium on growth, yield, quality and nutrient uptake of radish (*Raphanus sativus* L.) var. Pusa Chetki under south Gujarat conditions	Dr. M. N. Patel	2002
3.	Nishakumari	04-4397-2000	Effect of nitrogen, phosphorus and rhizobium on growth and yield of cowpea *(Vigna sinensis* Savi) variety 'Pusa Komal'	Dr. M. N. Patel	2003
4.	Patil Dipak Raosaheb	04-4396-2000	Effect of seed treatment with GA_3 and NAA on growth and yield of okra (*Abelmoschus esculentus* (L.)	Dr. M. N. Patel	2003

			Moench) cv. GO-2		
5.	Vashi Jimi Manharbhai	04-4398-2000	Response of onion (*Allium cepa* L.) to spacing and weed control treatments.	Dr. M. N. Patel	2004
6.	Makwana Jitendrabhai Laxmanbhai	04-5250-2002	Effect of plant growth regulators on growth, yield quality of cabbage *(Brassica oleracea* var. *capitata* L.) cv.Golden Acre	Dr. M. N. Patel	2005
7.	Desai Shaunakkumar Kishorchandra	04-5251-2002	Effect of GA_3 and NAA on growth and yield of onion *(Allium cepa* L.) cv. N-53	Dr. M. N. Patel	2006
8.	Harsha S.N.	04-0015-2004	Effect of GA_3 and NAA on growth and seed yield of chilli *(Capsicum annuum* L.) cv. S-49	Dr. M. N. Patel	2006
9.	Patel Jigneshkumar Chandubhai	04-00575-2009	Effect of plant density and corm size on growth and yield of elephant foot yam (*Amorphophallus paeoniifolius* (Dennst.) Nicolson) cv.Gajendra	Dr. N. B. Patel	2011
10.	Tekale Ganesh Shivaji	04-0583-2009	Effect of packaging and storage temperature on the shelf-life and quality of okra [*Abelmoschus esculentus* (L.) Moench] cv. VNR Green".	Dr. T. R. Ahlawat	2011
11.	Patel Rajankumar Pankajkumar	04-0580-2009	Effect of polyethylene packaging and low temperature on the shelf life of bell pepper (*Capsicum annuum* L.) cv. Indra	Dr. T. R. Ahlawat	2012
12.	Kadam Yogesh Ramchandra	04-0846-2010	Study of heterosis, combining ability and gene action in vegetable cowpea (*Vigna unguiculata* (L.) Walp.)	Dr. A. I. Patel	2012
13.	Kirti Choudhary	04-00848-2010	Effect of biofertilizers and chemical fertilizers on growth, yield and	Dr. D. R. Bhanderi	2012

			quality of okra (*Abelmoschus esculentus* (L.) Moench) cv. GO-2		
14.	More Sanket Jijabrao	04-00857-2010	Effect of transplanting dates and mulching on growth and yield of tomato (*Lycopersicon esculentum* Mill.) cv. GT 2	Dr. D. R. Bhanderi	2012
15.	Manoj Agrawal	04-0853-2010	Response of biofertilizers on tomato (*Lycopersicon esculentum* Mill.) cv. Junagadh Tomato-3	Dr. S. N. Saravaiya	2012
16.	Lad Hirenkumar Rameshbhai	04-0850-2010	Genetic divergence in cowpea (*Vigna unguiculata* (L.) Walp.)	Dr. S. N. Saravaiya	2012
17.	Chaudhari Bhaveshkumar Natvarlal	04-0835-2010	Performance of greater yam (*Dioscorea alata* L.) under different staking systems	Dr. S. N. Saravaiya	2012
18.	Patel Jigarkumar Mohanbhai	04-0866-2010	Genetic studies of yield and yield attributing traits in vegetable 13 belmo bean *Lablab purpureus* (L.) Sweet.	Dr. A. I. Patel	2012
19.	Ashifa Haroon Momin	04-0830-2010	Response of okra (*Abelmoschus esculentus* (L.) Moench) cv. GO-2 to foliar feeding of water soluble fertilizers	Dr. S. N. Saravaiya	2013
20.	Bhagade Ankita Abheejit	04-0833-2010	Assessment of genetic diversity in brinjal (*Solanum melongena* L.)	Dr. D. R. Bhanderi	2013
21.	Chaudhari Parikshitbhai Prakashbhai	04-0836-2010	Assessment of genetic diversity in vegetable 13 belmo bean (*Lablab purpureus* (L.) Sweet)	Dr. A. I. Patel	2013
22.	Chanda Harish	04-0834-2010	Feasibility of organic farming in tomato cv. Junagadh Tomato 3	Dr. S. N. Saravaiya	2013
23.	Kodappully Ananya Chandran	04-0849-2010	Assessment of genetic diversity in 13 belmo bean (*Lablab purpureus* (L.) Sweet)	Dr. A. I. Patel	2013

24.	Patel Vaidehi Vijaybhai	04-0869-2010	Effect of trimming and packaging on leafy vegetables stored under refrigerated conditions	Dr. T. R. Ahlawat	2013
25.	Shinde Siddhanath Rakhamajee	04-0879-2010	Effect of stage of harvesting, polyethylene packaging and storage temperature on the shelf life and quality of tomato (*Lycopersicon esculentum* Mill.) cv.Vaishali	Dr. T. R. Ahlawat	2013
26.	Nanavare Prashant Ragunath	04-0858-2010	Effect of artificial pollination and pinching on growth, sex expression and yield of bottle gourd (*Lagenaria siceraria* L.)	Dr. N. B. Patel	2013
27.	Eragamreddy Eswara Prasad Reddy	04-1069-2011	Study of heterosis and combining ability in brinjal (*Solanum melongena* L.)	Dr. A. I. Patel	2013
28.	Jujhar Singh Nagar	04-1079-2011	Study of heterosis, combining ability and gene action in tomato (*Lycopersicon esculentum)*	Dr. D. T. Desai	2013
29.	Sante Pankaj Ramchandra	04-1104-2011	Genetic studies of yield and yield attributing traits in vegetable 14belmo bean (*Lablab purpureus* (L.) Sweet)	Dr. A. I. Patel	2013
30.	Wakchaure Sangram Sitaram	04-1115-2011	Effect of foliar application of micronutrients in tomato (*Lycopersicon esculentum* Mill.) cv. Gujarat Tomato 2	Dr. S. N. Saravaiya	2014
31.	Bhavna Mali	04-1063-2011	Genetic architecture for yield and quality attributes in tomato (*Lycopersicon esculentum* Mill.)	Dr. A. I. Patel	2014
32.	Devulkar Nilesh Gajanan	04-1068-2011	Effect of different spacing and planting dates on growth and yield of onion *(Allium*	Dr. D. R. Bhanderi	2014

			cepa L.) var. Agri Found Light Red under south Gujarat condition		
33.	Rathod Hetal Rajeshkumar	04-1355-2012	Genetic variability, correlation, path and d^2 analysis in tomato (*Lycopersicon esculentum* Mill.)	Dr. S. N. Saravaiya	2014
34.	Narendra Kumar	04-1342-2012	Heterosis and combining ability for yield and yield attributes in okra (*Abelmoschus esculentus* (L.) Moench)	Dr. S. N. Saravaiya	2014
35.	Patel Krishna Dhirajlal	04-1348-2012	Study of variability, correlation, path co-efficient analysis and genetic diversity in brinjal	Dr. N. B. Patel	2014
36.	Jethava Bhaskarkumar Arvindbhai	04-1335-2012	Heterosis and combining ability in okra (*Abelmoschus esculentus* (L.) Moench)	Dr. D. R. Bhanderi	2014
37.	Panchal Bhakti Bharatkumar	2020213020	Genetic studies for productivity and its related traits in tomato (*Solanum lycopersicum* L.)	Dr. N. B. Patel	2015
38.	Joshi Virendrakumar Mukeshbhai	2020213014	Studies on heterosis and combining ability in okra (*Abelmoschus esculentus* (L.) Moench)	Dr. S. N. Saravaiya	2015
39.	Patel Priyankakumari Naradbhai	2020213034	Effect of decapitation and PGRs on growth and seed yield of cluster bean (*Cyamopsis tetragonoloba* Taub.)	Dr. S. N. Saravaiya	2015
40.	Patel Himani Biharilal	2020213028	Genetic analysis of yield and its quality parameters in okra *(Abelmoschus esculentus* (L.) Moench)	Dr. D. R. Bhanderi	2015
41.	Jay Narayan Tiwari	2020213013	Genetic studies for horticultural traits in	Dr. Sanjeev	2015

			okra (*Abelmoschus esculentus* (L.) Moench)	Kumar	
42.	Kalariya Vijaysinh Dhanjibhai	2020213015	Impact of plant growth regulators by seed treatment on germination, growth, yield and quality of okra (*Abelmoschus esculentus* (L.) Moench) cv. GAO- 5	Dr. V. K. Parmar	2015
43.	Patel Nishtha Sureshchandra	2020213031	Training system and spatial arrangement in tomato (*Solanum lycopersicum* L.) under protected conditions	Dr. Sanjeev Kumar	2015
44.	Akhilesh Kumar	2020213001	Heterosis and combining ability analysis for productivity and related traits in brinjal (*Solanum melongena* L.)	Dr. D. R. Bhanderi	2015
45.	Sankhla Pintukumar Mohanji	2020213043	Heterosis and combining ability analysis for productivity and related traits in tomato (*Solanum 16belmoschus* L.)	Dr. S. Y. Patel	2015
46.	Gadhiya Ankitkumar Devrajbhai	2020213009	Genetic 16 belmoschus of yield and it's components in brinjal (*Solanum melongena* L.)	Dr. K. N.Chaudhari	2015
47.	Malviya Amit Vanrajbhai	2020214022	Study of heterosis and combining ability for yield and its contributing traits in bottle gourd (*Lagenaria siceraria* (Mol.) Standl.)	Dr. D. R. Bhanderi	2016
48.	Patel Dipt Anilkumar	2020214029	Sweet potato response to plant growth retardants	Dr. S. N. Saravaiya	2016
49.	Desai Karamashibhai Malajibhai	2020214010	Breeding investigations in brinjal (*Solanum melongena* L.)	Dr. S. N. Saravaiya	2016
50.	Jadav Niteshbhai Karamchandbhai	2020214016	Line x tester analysis for yield, quality and its	Dr. S. Y. Patel	2016

			component traits in tomato (*Solanum lycopersicum* L.)		
51.	Patel Utsav Vinodbhai	2020214032	Genetic variability, correlation, path and d^2 analysis in cowpea (*Vigna unguiculata* (L.) Walp.)	Dr. V.K. Paramar	2016
52.	Solanki Bijalben Pramodbhai	2020214039	Assesment of genetic diversity in tomato (*Solanum lycopersicum* l.)	Dr. A.I. Patel	2016
53.	Chaudhari Varsha Ishwarbhai	2020214005	Assessment of parthenocarpic cultivars ofcucumber for horticultural traits under NVPH	Dr. Sanjeev Kumar	2016
54.	Sidagireppa Doni	2020214038	A study of heterosis and combinibng ability in ridge gourd (*Luffa acutangula* (L.) Roxb.)	Dr. D.R. Bhanderi	2016
55.	Chaudhary Lalabhai Rajabhai	2020215014	Effect of different type of mulches on growth, yield and quality of brinjal (*Solanum melongena* L.)	Dr. S.S. Masaye	2017
56.	Nikki Bharti	2020215031	Studies on exogenous application of PGRs in bell pepper (*Capsicum annuum* L.) for various horticultural traits under NVPH	Dr. Sanjeev Kumar	2017
57.	Habibullah	2020215022	Effect of foliar application of micronutrients on tomato (*Solanum lycopersicum* L.) under protected culture	Dr. S.N. Saravaiya	2017
58.	Golakiya Prayagbhai Dineshbhai	2020215021	Evaluation of GA_3 on performance of cowpea (*Vigna unguiculata* (L.) Walp.)	Dr. S.N. Saravaiya	2017
59.	Navya K	2020215030	Effect of integrated nutrient management on growth, yield and quality of elephant foot yam [*Amorphophallus paeoniifolius* (Dennst.) Nicolson]	Dr. K.D. Desai	2017

60.	Sheth Sachin Gautamkumar	2020215057	Effect of integrated nutrient management on growth, yield and quality of sweet potato [*Ipomoea batatas* (L.) Lam]	Dr. K.D. Desai	2017
61.	Patel Atishkumar Nareshbhai	2020215040	Influence of pinching and plant growth regulators on growth, sex expression and yield of bottle gourd	Dr. V.K. Parmar	2017
62.	Sagar Raj Nayak	2020215055	Influence of pinching and plant growth regulators on morphological, physiological, floral and yield characters of cucumber (*Cucumis sativus* L.) under open field condition	Dr. V.K. Parmar	2017
63.	Chaudhary Kamleshkumar Vaktabhai	2020215013	Seedling invigouration by halo priming for salt tolerance in tomato (*Solanum lycopersicum* L.)	Dr. Sanjeev Kumar	2017
64.	Chaudhari Vibhutiben Lavjibhai	2020215010	Growth and yield performance of Cabbage (*Brassica oleracea* L.var *capitata*) influence through foliar spray of micronutrients	Dr. N. K. Patel	2017
65.	Lathiya Jasminkumar Bharatbhai	2020215028	Influence of PGRs on fruit setting and other horticultural traits in tomato (*Solanum lycopersicum* L.) under NVPH	Dr. Sanjeev Kumar	2017
66.	Chaudhari Vishvas Jitubhai	2020215011	Effect of foliar spray of micronutrients on growth and yield of Cauliflower (*Brassica oleracea*.var *botrytis*)	Dr. N. K. Patel	2017

Post Graduate Students Awarded Doctoral Degrees in the discipline of Vegetable Science

Sr. No	Name of PG Student	Registration No.	Title of the Thesis	Name of Major Guide	Year of Passing
1.	Patel Narenbhai Khandubhai (In Service)	04-0885-2010	Integrated nutrient management in little gourd	Dr. D. T. Desai	2015
2.	Tekale Ganesh Shivaji	04-1111-2011	Integrated nutrient management (INM) for tomato (*Lycopersicon esculentum* Mill.) cv. Gujarat tomato-2	Dr. S. N. Saravaiya	2015
3.	More Sanket Jijabrao	04-1340-2012	Line x tester analysis over environments in okra (*Abelmoschus esculentus* (L.) Moench)	Dr. K.N. Chaudhari	2016
4.	Wakhare Avinash Ramdas (Deputation) Rajgurunagar - Pune	04-0884-2010	Effect of different levels of potassium and sulphur on growth, yield, quality and storage life of garlic (*Allium sativum* L.) cv. G-41	Dr. D. T. Desai	2016
5.	Chaudhari Bhaveshkumar Natvarlal	04-1324-2012	Line x tester analysis over environments in brinjal (*Solanum melongena* L.)	Dr. A. I. Patel	2016
6.	Savale Sandeep	1020213010	Studies on heterosis, combining ability and stability for yield and quality traits in tomato (*Solanum lycopersicum* L.)	Dr. A. I. Patel	2016
7.	Nanavare Prashant Ragunath	1020213005	Genetic architecture of fruit yield and its contributing quantitative traits in okra (*Abelmoschus esculentus* (L.) Moench)	Dr. S.N. Saravaiya	2016

Post Graduate Students who have cleared NET in the Discipline of Vegetable Science

Sr. No.	Name	Year
1.	Yogesh Auti	2011-12
2.	Manoj Agrawal	2012-13
3.	Chaudhari Bhaveshkumar Natvarlal	2012-13
4.	More Sanket Jijabrao	2012-13
5.	Chanda Harish	2013-14
6.	Nanaware Prashantkumar Raghunath	2013-14
7.	Eragamreddy Eswara Prasad Reddy	2013-14
8.	Narendra Kumar	2014-15
9.	Rathod Hetal Rajeshkumar	2014-15
10.	Devulkar Nilesh Gajanan	2014-15
11.	Jethava Bhaskar Arvindbhai	2014-15
12.	Bhavna Mali	2014-15
13.	Patel Krishna Dhirajlal	2014-15
14.	Patel Himani Biharilal	2015-16
15.	Panchal Bhakti Bharatkumar	2015-16
16.	Kalariya Vijaysinh Dhanjibhai	2015-16
17.	Akhilesh Kumar	2015-16
18.	Patel Priyankakumari Naradbhai	2015-16
19.	Vaghashiya Jaysukh M.	2015-16
20.	Jay Narayan Tiwari	2015-16
21.	Vashi J. M.	2015-16
22.	Golakiya Prayagbhai Dineshbhai	2016-17
23.	Sheth Sachin Gautamkumar	2016-17
24.	Navya K	2016-17
25.	Nikki Bharti	2016-17
26.	Sagar Raj Nayak	2016-17

Medalist Students of the Department

Sr. No.	Name of student	Year
Vice Chancellor Gold Medal B. Sc. (Hons.) Horticulture		
1.	Rathod Hetal Rajeshkumar	2011-12
2.	Gadhiya Ankitkumar Devrajbhai	2012-13
ASPEE Foundation Gold Plated Silver Medal M. Sc. Horticulture		
1.	More Sanket Jijabrao	2012-13
2.	Patel Himani Biharilal	2015-16
ASPEE Foundation Gold Plated Silver Medal for Ph. D. Horticulture		
1.	More Sanket Jijabrao	2015-16
Agricultural Research Services		
1.	More Sanket Jijabrao	2015-16

Patel Himani Biharilal

Gadhiya Ankitkumar Devrajbhai

More Sanket Jijabrao

Sr. No.	Name of student	Award/ Recognition	Recognized by	Recognition Year
1.	Shah Smit B.	Vice Chancellor Gold Medal B. Sc. (Hons.) Horticulture	NAU, Navsari	2016-17
		8th rank in the PG entrance examination of SAUs	NAU, Navsari	2017
2.	Adarsh Guddadamath	Best outgoing student of the college	KRCCH, Arabhavi, UHSB, Bagalkot, Karnataka	2018
		14th rank in All India AIEEE-PG Exam	ICAR	2017
3.	Modi Shivani R.	19th rank in the PG entrance examination of SAUs	NAU, Navsari	2017
4.	Gadhiya Dhara P.	22nd rank in the PG entrance examination of SAUs	NAU, Navsari	2017

Smit Shah, receiving Vice Chancellor Gold Medal from Hon. Governer of Gujarat

Adarsh Gudaddamath being felicitated as "Best outgoing student of the year" by UHSB, Bagalkot during convocation-2018.

Coaching Classes

Year	Examination	Period	Faculty Members
2014	JRF	26/11/2014 to Feb., 2015	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel,
2013	NET	January and February, 2013 and October-December, 2013	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel
2014	NET	January and February, 2014 and October-December, 2014	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel, Dr. N.B. Patel, Dr. K.D. Desai, Dr. Sanjeev Kumar
2015	NET	January and February, 2015 and October-December, 2015	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel, Dr. K.D. Desai, Dr. Sanjeev Kumar
2016	NET	January and February, 2016 and October-December, 2016	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel, Dr. N.B. Patel, Dr. K.D. Desai, Dr. Sanjeev Kumar
2017	NET	April and May, 2017	Dr. S. N. Saravaiya, Dr. D. R. Bhanderi, Dr. A. I. Patel, Dr. N.B. Patel, Dr. K.D. Desai, Dr. Sanjeev Kumar
2018	JRF	29-01-2018 to 06-02-2018	Dr. S. N. Saravaiya, Dr. A. I. Patel
2018	HO/ADH	07-03-2018 to 17-03-2018	Dr. S. N. Saravaiya, Dr. N.B. Patel
2018	NET	26-03-2018 to 07-04-2018	Dr. S. N. Saravaiya, Dr. A. I. Patel

Exposure Visit of PG Students

2015-16

Visit to processing plant at Lachhakadi

Visit to field of ponted gourd grower at Vansda

2016-17

Group meeting with farmers of Bhadli Village, Ta. Dantiwada

Visit to Potato cold storage unit at Bhadli Village, Ta. Dantiwada

2017-18

Net house cultivation of tannia by Shri Satishbhai Gordhanbhai Patel, a progressive farmer of of village Pankhala, Taluka Sagbara, District Narmada

High-tech nursery raising by Shri Jayeshbhai Nathubhai Patel and his wife Smt. Heenaben Jayeshbhai Patel, Village Bharadia, Taluka Valia, District Bharuch

Awards-Recognition: Faculty

Dr. G.D. Patel, Assistant Professor

Receiving Vice-Chancellor Gold Medal in 8th Convocation of NAU, Navsari on February 22, 2013

Dr. S.N. Saravaiya, I/c Professor
Best Teacher Award in 10th Convocation of NAU on 15-01-2015

Dr. Sanjeev Kumar
Young Scientist Award-2016

Dr. Sanjeev Kumar
Outstanding Participant in Winter School (November 09-29, 2016) organized by Dept. of Soil & Water Engineering., PAU-Ludhiana

Dr. Sanjeev Kumar receiving Best Oral Presentation Award in National Seminar on "Technologies and Sustainability of Protected Cultivation of Hi-Valued Vegetable Crops" February 01-03, 2018

Dr. K.D. Desai receiving Best Poster Presentation Award in National Seminar on "Technologies and Sustainability of Protected Cultivation of Hi-Valued Vegetable Crops" February 01-03, 2018

RESEARCH ACTIVITIES

Focus Areas

1. Development of HYV/hybrids in mandate vegetable crops for stable production to minimize yield gap between zone, area and soil type.
2. Research on underutilized and unutilized vegetables.
3. Development of variety (s) for export purpose.
4. Cultivation of exotic unusual vegetables.
5. Research on biotic and abiotic stress management.
6. Research on perennial vegetable crops.
7. Hi-tech nursery raising and Protected cultivation of vegetable crops.
8. Organic farming.
9. Development of improved and sustainable technologies under changing climate.
10. Vegetable processing, storage and transportation.
11. Seed production technology.
12. Opening new vistas of research on Vegetable Grafting and microgreens- New generation smart food etc.
13. Transfer of technology.

Research Schemes in Operation

Sr. No.	Name of Research Project	Budget Head No.	Year of Commencement	Type of Scheme	PI & Co-PI
1.	Research in Vegetable Crops	12013	1992-93	Development Charges	Dr. D.R. Bhanderi & Dr. N.K. Patel
2.	Research in vegetable crops under protected conditions-Phase-II	12017	2011-12	Development Charges	Dr. N.B. Patel & Dr. Sanjeev Kumar
3.	Development of hybrids in vegetable especially in okra, brinjal, tomato and capsicum	12021	2012-13	Development Charges	DR. A.I. Patel & Dr. B.N. Chaudhari
4.	AICRP on Tuber Crops	2006-3	1994-95 (Waghai) 2006 (Navsari)	ICAR	Dr. K.D. Desai
5.	AICRP on Vegetable Crops Voluntary Centre	2058	2010-11	ICAR	Dr. K.N. Chaudhari

1. Research in Vegetable Crops (BH: 12013)

Objectives:

- To develop horticulture system for different varieties/hybrids of vegetable crops.
- To develop high yielding, disease-pest resistant varieties of vegetable crops suited to south Gujarat.
- To develop Integrated Pest Management System in vegetable crops.

2. Research in vegetable crops under protected conditions- Phase-II (BH: 12017)

Objectives:

- To identify cultivars ideal for protected cultivation.
- To standardize the Production technology for vegetable crops under protected conditions.
- To train and demonstrate farmers in developed technologies.

3. Development of hybrids in vegetable especially in okra, brinjal, tomato & capsicum, Navsari. (BH: 12021)

Objectives:

- To develop high yielding, disease-pest resistant hybrids in okra, brinjal, tomato and Capsicum.
- To test hybrids in different regions and on farmers field of South Gujarat.
- To carry out Seed production of promising hybrids
-

4. AICRP on Tuber Crops. (BH: 2006-3)

Objectives:

- Introduction of high yielding varieties of sweet potato, elephant foot and yam.
- Molecular characterization of important germplasm; particularly for pests and diseases.
- Crop improvement for higher productivity as well as for biotic and abiotic (salinity, sodicity, drought) stress tolerance/ resistance.
- Optimization of suitable agro-technology for sustainable and quality production of Tuber Vegetables.
- Developing most suitable tuber crop (Sweet potato, Elephant foot and Yam) based cropping systems.
- IPM package against important pests and diseases in sweet potato (weevil, crown and tuber infestation) and in elephant foot (collar rot).
- Evaluation of storage structures for safe commercial storage to prevent post harvest losses.
- Standardization of technology for developing various processed products.

5. AICRP on Vegetable Crops. (BH: 2058)

Objectives:

- Evaluation of different varieties and hybrids against biotic and abiotic stress in different vegetable crops.

Overview of Research Trials


Pointed gourd


INM in Little gourd


Organic Brinjal


LSVT Cow pea

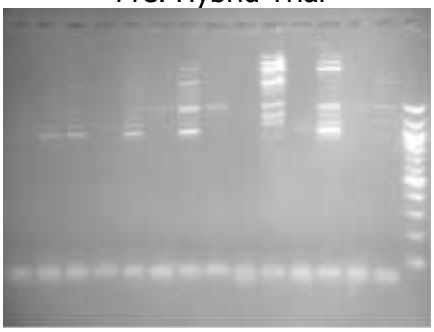

LSVT Indian bean

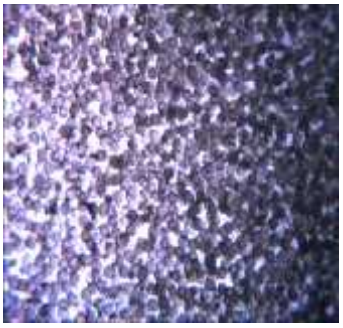

LSVT Onion


Pre. Hybrid Trial


NBRH-14-01 in LSHT


NTH-15-13 in LSHT


Restorer Identification in chilli


Fertility verification in CMS based chilli hybrids


NCH -1603 in PHT


Minisett Technique for EFY


Secondary Nursery for sweet potato


Live staking in Greater Yam

Cultivar Bhukanti in MLT

Organic cultivation of EFY

MLT on Cassava

AVT-I (Det. type)

AVT-II (Indet. type)

IET (Cherry tomato)

AVT-I (Chilli)

IET- Brinjal (Round)

YVMV resistant AVT-I (Okra)

Training and pruning in capsicum under protected conditions

Training and pruning in tomato under protected conditions



Training and pruning in cucumber under protected conditions



Training and afrtificial polination in muskmelon under protected conditions










Use of pruned shoots for multiplication in cucumber and tomato:
A new Apprroach to reduce cost of cultivation



Grafting brinjal and tomato onto wild rootstock against biotic and abiotic stresses



Homestead utility of Microgreens for nutritional Security: Tomorrow's Technology

Research Recommendations

A) Crop improvement: Varietal Development

1. Little Gourd: GNLG-1 (2012)

It recorded 15.6 tones/ha fruit yield with yield advantage of 32.9 % over local check. It produced more number of fruits per vine in addition to its better quality. In disease and pest reaction, it is also found superior with respect to disease *viz.,* anthracnose, powdery mildew and vine borer as compared to local check.


2. Pointed Gourd: GNPG-1 (2014)

This variety was selection from local germplasm. It has recorded 47.13 % higher fruit yield (15.11 t/ha) over the local variety. The variety has long, light green fruit with fair whitish strip.


3. Brinjal: GNRB 1 (Gujarat Navsari Round Brinjal 1) [2016]

GNRB 1 (Gujarat Navsari Round Brinjal 1) Variety registered 23 % fruit yield superiority over GJB-3 and GOB-1. Calyx is medium size, spineless and purple in colour. Fruits are round, dark purple in colour and have purple green leaves. GNRB-1 had low incidence of little leaf disease reaction (3.90 %) and shoot borer (3.35 %) GNRB-1 is recommended for general cultivation in brinjal growing areas of South Gujarat.

Varieties Endorsed: Sweet Potato: C-71, Cross-4, Bhukanti

C-71 (1994-95)

Bhukanti (2017-18)

4. Tomato: GN Tom 2 (2017-18)

Tomato genotype NTL-12-01 (301.0 q/ha) performed well under South Middle and North Gujarat regions where, it exhibited overall 28.47, 26.54 and 25.82 % increased fruit yield over standard checks *viz;* JT-3 (234.3 q/ha), AT-3 (226.8 q/ha) and DVRT-2 (228.1 q/ha), respectively. The genotype showed less damage by fruit borer, whitefly as well as leaf miner as compared to standard checks. The genotype NTL 12-01 is recommended for cultivation of farmers of South, North and Middle Gujarat regions as GN Tom 2.

B) Production Technology:

Year: 1985

1. Standardization of fertilizer dose and spacing in tapioca:

The tapioca variety H165 should be planted in first week of April at 90 cm x 90

cm spacing. The crop should be manured at the rate of 12.5 tons FYM/ha as basal while land preparation and fertilized at the rate of 75:75:75 kg/ha N: P_2O_5 K_2O for higher production of tubers. The fertilizers are to be applied in two equal splits viz. first half at the time of planting and the remaining half at two months after planting.

Year: 1990-91

1. Standardization of fertilizer dose in cabbage:

The maximum production in cabbage var. Pride of India could be obtained through application of 75 kg N/ha in two equal splits. The first half of N should be applied at the time of transplanting and the second half at 30 days after transplanting.

2. Standardization of seed production technology in cauliflower cv. Early Kunwari:

Different methods for production of cauliflower seeds var. Early Kunwari were tried and the seed to seed method involving raising nursery during last week of August and transplanting during last week of September was found best. Further, maximum seed production (517 kg/ha) could be obtained by applying 120 kg N/ha in two equal splits *viz.* First at transplanting and second one month after transplanting.

Year: 1992-93

1. Sprinkler irrigation in cabbage:

The crop of cabbage could be irrigated through sprinkler at 11 to 14 days interval keeping 5 cm depth. The sprinklers should be operated at 2.75 kg/cm^2 pressure with an application rate of about 1.67 cm/hr for about 3 hours.

2. Sprinkler irrigation in cow pea:

The crop of cowpea cv. Pusa Phalguni could be irrigated through sprinkler at 9 to 10 days interval up to March and 7 to 8 days interval during April and May keeping 5 cm depth. The sprinklers should be operated at 2.75 kg/cm^2 pressure with an application rate of about 1.67 cm/hr for about 3 hours.

Year: 1993-94

1. Standardization of fertilizer dose in cauliflower cv. Pusa Deepali :

The winter crop of cauliflower cv. Pusa Deepali should be fertilized at the rate of 40:40 kg N:P_2O_5 per hectare as basal dose followed by an application of 40 kg N/ha at 30 days after T.P.

2. Sprinkler irrigation in cauliflower:

The crop of cauliflower could be irrigated through sprinkler at 11 to 14 days interval keeping 5 cm depth. The sprinklers should be operated at 2.5 kg/cm^2 pressure for about three hours.

3. Standardization of sowing time, spacing and fertilizer dose in India Bean for summer planting

Indian bean cv. Kapasi should be sown in the third week of May at distance of 60 cm between the rows and 30 cm within the row for higher production of green

pods. The crop need 60 kg N/ha to be applied in two equal splits; *viz.* first half as basal and the remaining half at 20 days after sowing.

Year: 1995-96

1. **Standardization of fertilizer doses for okra cultivation:**

The Okra crop cv. Parbhani Kranti should be fertilized at rate of 150 kg N/ha in two equal splits. The first half dose of nitrogen (75 kg/ha) and full dose of P and K each @ 50 kg/ha should be applied as a basal and the remaining 75 kg N/ha should be applied at 45 days after sowing.

2. **Sprinkler irrigation in okra:**

The crop of okra could be irrigated through sprinkler. Under enough water availability, the sprinkler system should be operated for three hours at ten days interval. Under limited water availability conditions, the system should be operated for three hours at 18 days interval. The sprinklers should be operated at 2.75 kg/cm^2.

Year: 1997

1. **Standardization of fertilizer doses for onion cultivation:**

The okra crop cv. Parbhani Kranti should be fertilized at the rate of 20 t/ha with seasoned press mud 15 days prior to sowing and 75 kg N/ha in three equal splits each at sowing and 30 and 60 days after sowing.

2. **Standardization of fertilizer doses for onion cultivation:**

The maximum production in onion cv. Pusa Red could be obtained through application of 125 kg N/ha in two equal splits. The first half dose of nitrogen (62.5 kg/ha) and full dose of P and K each @ 50 kg/ha should be applied as a basal and the remaining half dose of nitrogen should be applied at 30 days after transplanting.

Year: 1998

1. **Standardization of fertilizer doses for cabbage cultivation:**

The cabbage crop cv. Golden Acre should be fertilized at the rate of 200 kg N/ha in two equal splits. The first half dose of nitrogen (100 kg N/ha) and full dose of K @ 50 kg/ha should be applied as a basal and the remaining 100 kg N/ha should be applied at 30 days after transplanting.

2. **Standardization of fertilizer doses and spacing for capsicum cultivation:**

The crop of capsicum cv. California Wonder should be transplanted at a distance of 45 x 20 cm spacing. The crop should be fertilized at the rate of 120:50:50 kg/ha NPK for higher production. The first half dose of nitrogen (60 kg/ha) should be applied as basal along with P and K each at 50 kg/ha while transplanting and the remaining half does of nitrogen to be applied at 30 days after transplanting.

Year: 1999

1. **PGRs application in capsicum:**

The maximum production in capsicum Cv. California Wonder could be obtained through one spray of NAA-10 ppm at flower initiation stage.

Year: 2000

1. PGRs application in okra:

The farmers are advised to spray summer Okra Var. Parbhani Kranti with NAA 75 mg/l at 15 and 30 days after sowing to get higher yield of fruit and seed.

2. Standardization of fertilizer doses and spacing for bottle gourd cultivation:

The farmers are advised to sow bottle guard cv. Pusa Naveen at 2.0 X 1.0 m distance and should be fertilized with 50 kg N, 50 kg P_2O_5 and 50 kg K_2O along with 10 ton FYM per hectare as basal dose followed by 50 kg N/hectare at 30 days after sowing.

Year: 2002

1. Standardization of fertilizer doses and spacing in water melon:

The farmers of South Gujarat are advised to sow Watermelon cv. Sugar Baby in single row at 2 x 1 m distance or in paired row at 3.4 x 1 x 0.6 m distance and fertilized it with 150 kg N, 50 kg P and 50 kg K along with 20 t FYM per hectare.

Year: 2007

1. Standardization of fertilizer doses for brinjal cultivation:

It is recommended to the peasantry of South Gujarat area, growing brinjal cv. "Suarti Ravaiya" during *rabi* season, to fertilize their brinjal plant with the combination of 75 % recommended dose of fertilizer (75:28:28 kg N, P_2O_5, K_2O) along with 20 tones of Press-mud/ ha or 10 tones of Bio-compost/ ha, to obtain higher yield as well as to improve the soil health.

Year: 2011-12

1. Effect of land configuration, soil conditioner and fertilizer on greater yam:

The farmers of south Gujarat heavy rainfall zone, AES-III growing greater yam (*Dioscorea alata* L.) cv. Local Round are advised to plant the crop on ridge furrow of 30 cm height at 90 x 90 cm distance and fertilize with FYM @ 20 t/ha along with recommended dose of fertilizer @ 80 : 60 : 80 NPK kg/ha. Full dose of FYM, P_2O_5 and half dose of N and K_2O applied at plating then remaining half dose of N and K_2O should be applied in two equal split at 90 and 135 days after planting for getting higher tuber yield and maximum economic return (1: 2.95).

2. Organic production of elephant foot yam:

The farmers who want to grow elephant foot yam organically are advised to apply either Vermicompost @ 5 t/ha +*Azospirillum* @ 5 kg /ha +*Phosphobacteria* 5 kg/ha +ash @ 5 t/ha or FYM @ 10 t/ha + *Azospirillum* @ 5 kg /ha +*Phosphobacteria* 5 kg/ha + ash @ 5 t/ha).

The farmers of South Gujarat intending to grow elephant foot yam (cv. Gajendra) are advised to apply FYM @ 10 t/ha + 80: 60: 100 NPK kg/ha for

getting higher net income of Rs. 2.9 lakh and BCR of 2.9.

3. **Effect of different organic manures on growth, yield and quality of yam:**

The farmers who want to grow greater yam organically are advised to apply 75% N through vermicompost and 25% N through castor cake for getting net income of Rs. 1.9 lakh and BCR of 2.4. The farmers of South Gujarat intending to grow greater yam are advised to apply 80-60-80 kg N-P_2O_5-K_2O/ha. For getting higher net income of Rs. 2.8 lakh and BCR of 2.8.

Year: 2012-13

1. **Effect of different organic manures on growth, yield and quality of organically grown turmeric (*Curcuma longa*):**

The farmers of South Gujarat heavy rainfall zone AES III growing turmeric variety Sugandhum are advised to apply bio compost (1.8% N) or vermi compost (1.2% N) + neem cake (5.1% N) in equal proportion to supply N @ 60 kg/ha for achieving higher rhizome yield with superior quality of turmeric as well as net income. Application of manure in this manner also improves the soil health.

Year: 2013-14

1. **Effect of plant density and sett size on growth and dry matter partitioning of elephant foot yam:**

The farmers of south Gujarat heavy rainfall agro-climatic zone growing elephant foot yam cv. Gajendra are advised to plant elephant foot yam at the distance of 60 cm × 60 cm by using seed corm sett of 250 g weight for obtaining higher BCR. By this way, farmers can obtain higher yield and save the cost of seed corm.

Yield from 250 g seed corm sett

Yield from control sett

2. **Effect of banana pseudostem sap and vermiwash spray on organically grown onion:**

The farmers of South Gujarat heavy rainfall zone (AES III) those who wants to grow onion cv. Pilipati are advised to apply 125 kg N/ha through 2.4 t/ha biocompost, 0.9 t/ha castor cake and 3.2 t/ha vermicompost in equal proportion of nitrogen along with foliar spray of enrich banana pseudo stem @ 2% spray or 2% spray of banana pseudo stem and enrich banana pseudo stem in the 1:2 ratio to get high net return. Organic manures should be apply at the time of transplanting and one month after transplanting whereas, the liquid manures should be apply at 15 days interval starting from 15 days after transplanting *i.e.* 15, 30 and 45 days after transplanting.

3. **Feasibility of organic farming in tomato cv. Junagadh Tomato -3:**

The farmers of South Gujarat heavy rainfall zone (AES III) those who want to grow organic tomato cv. Junagadh Tomato at 60 cm x 60 cm spacing are advised to apply 75 kg N/ha through 2.1 t/ha biocompost (50%N) + 0.9 t/ha castor cake (50%) or 4.6 t/ha vermicompost (75% N) + 0.4 t/ha neem cack (25% N) in two splits (at the time of transplanting and one month after transplanting) to get higher yield and net profit. Common dose of *Azotobacter* biofertilizers @ 2 kg/ha with organic manures at the time of transplanting. To prevent the pest and disease infestation, foliar spray of vermiwash @ 0.5% and cow urine@ 1% at monthly interval after transplanting is beneficial.

Year: 2014-15

1. Integrated Nutrient Management in Little gourd:

The farmers of South Gujarat heavy rainfall zone AES III cultivating little gourd cv. GNLG-1 are advised to follow INM to fertilize the crop as per the schedule given below to get higher better quality fruits and net realization.

Basal dose: Apply 10 t/ha well decomposed FYM, 25 kgN/ha through Bio compost on equivalent N basis along with 50 kg/ha each of P and K by chemical fertilizer.

Top dressing: Apply 25 kg N/ha in two splits through chemical fertilizer at 30 and 60 days after Planting

Note: 1. In subsequent years, apply fertilizer as above schedule.

2. Pruning should be done in month of December.

2. Effect of different organics on growth and yield of brinjal cv*. Surti Ravaiya* (pink):

The farmers of South Gujarat heavy rainfall zone AES III intended to grow brinjal variety Surti Ravaiya (Pink) organically are advised to apply castor cake (4.5 % N ; dry weight basis) in two equal proportion to supply N @ 100 kg/ha for achieving higher yield and net income as well as to improve the soil health.

Apply 4.5 t/ha castor cake in two equal splits at the time of transplanting and one month after transplanting.

Note :

– *Trichoderma viride* should be applied at the rate of 5 kg/ha at the time of transplanting.

– Maize should be grown as trap crop on the border.

– Sticky trap should be used @ 40/ha.

– Tricho card should be used @ 5/ha.

After transplanting apply foliar spray of neem based pesticide and cow urine at monthly intervals.

3. Response of seed sowing on germination, growth, flowering and yield of Spine gourd (*Momordica dioica* Linn.) cv. Local:

The farmers of South Gujarat heavy rainfall zone AES-III interested to grow spine gourd cv. Local through seed are advised to sow five seeds per dibble on raised bed in last week of March and mulch with paddy straw for higher fruit yield.



4. Performance of greater yam (*Dioscorea alata* L.) under different stacking systems:

The farmers of south Gujarat heavy rainfall zone AES III growing greater yam cv. Local Round are advised to plant greater yam at the distance of 90 cm × 90 cm with elephant foot yam cv. Local as a live stacking crop in-between two rows of greater yam at a distance of 90 cm × 90 cm and train the vines of greater yam on the plants of elephant foot yam with application of 15 tonne of FYM and 120:90:120 kg NPK/ha to obtain higher yield and net return.

5. Effect of rates of castor cake and Banana Pseudostem sap on yield and quality of organically grown Garlic (*Allium sativum* L.):

The farmers of South Gujarat heavy rainfall zone AES III growing garlic organically are advised to apply recommended 100 kg N/ha through organic manures as per schedule given below to get higher yield and net profit.

- Apply 1.4 t/ha biocompost and 3.3 t/ha vermicompost at the time of sowing and 0.7 t/ha castor cake one month after sowing.
- Apply 2000 lit/ha banana pseudostem sap at 35 and 55 days after sowing

Note:

- Apply common dose of *Azotobacter* biofertilizer @ 2 kg/ha.
- After sowing, apply foliar spray of neem based insecticide and cow urine at monthly interval.
- Maize should be grown as trap crop at the border.
- Sticky trap should be used @ 40/ha.

Year: 2015-16

1. Standardization of fertigation and methods of training in cucumber

under naturally ventilated poly house:

Train plants to single stem system. Fertigate the crop with 9.0:7.5:7.5 kg NPK along with application of 0.5 kg *Trichoderma viride*, 0.5 litre *Pseudomonas fluorescens*, 2 t FYM or 0.4 t vermicompost and 5.0 kg micro-nutrient (Grade-5) at the time of sowing for higher net returns.



2. Site specific nutrient management study of Elephant foot Yam

The soil having deficient N and sufficient P and K then apply 100: 45: 75 NPK kg/ha in two splits. First dose of 50: 45: 37.5 NPK kg/ha at 45 days after planting. Second dose of 50: 00: 37.5 NPK kg/ha one month after application of first dose.


Year: 2016-17

1. Effect of rhizome size on growth and yield of turmeric cv. GNT-1.

The farmers of south Gujarat heavy rainfall zone are advised to plant mother rhizome pieces (10-15 g) of turmeric cv. GNT-1 in pro tray and transplant it after one month in field with minimum quantity of seed rhizomes.



2. Standardization of fertigation and methods of training in capsicum under naturally ventilated polyhouse.

Farmers cultivating capsicum in naturally ventilated polyhouse (1000 m^2 area) are advised to fertigate the crop with 25: 25: 25 kg NPK along with application of 0.5 kg *Trichoderma viride*, Phosphorous Solubilizing Bacteria (*Bacillus megaterium*), Azotobactor, *Pseudomonas fluorescens* each, 0.4 t vermicompost and 5.0 kg micro-nutrients (Grade-5) at the time of planting and train plants to four shoot system for higher net returns.



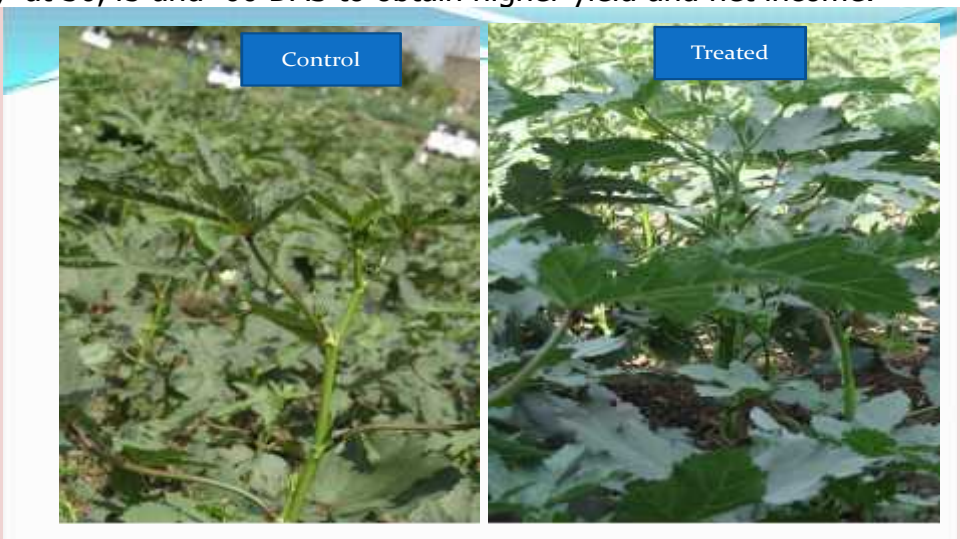
Year: 2017-18

1. Integrated Nutrient Management in cauliflower (*Brassica oleracea* var. botrytis):

The farmers of South Gujarat Agro climatic Zone-I growing cauliflower are advised to apply 20 kg N + 40 kg P_2O_5 along with 20 t/ha FYM and 5.70 t/ha Bio compost as basal doze. The 20 kg Nitrogen should be applied 30 DAT as top dressing to get higher yield and return.

2. Response of okra to foliar application of Silicon

The farmers of South Gujarat growing summer okra are advised to spray silicon based liquid fertilizer @ 2ml /l (silicon: 0.79% w/v + boron :0.18% w/v- OSAB – Si^+) at 30,45 and 60 DAS to obtain higher yield and net income.



Effect of Foliar application of silicon on okra.

3. Performance of grafted vs. non-grafted brinjal during rainy season under South Gujarat conditions

The farmers of South Gujarat Heavy Rainfall Zone-I (AES-III) are advice to adopt grafting technique using wild species (*Solanum torvum*) as rootstock and pink

and purple *Surati Ravaiya* brinjal as scion for better plant survival during rainy season, better fruit set, comparatively less shoot and fruit borer infestation, extended life span, higher yield and net returns.

4. Comparative performance of different parthenocarpic cultivars of cucumber through vegetative propagation under polyhouse conditions.

Farmers cultivating parthenocarpic cucumber varieties in greenhouse are advised to use newly pruned side shoots of current crop as propagating material for raising of successive crop without paying high price for seed which performs equally well to the crop raised from seeds and concurrently, excessive plants generated from pruned side shoots can be sold for additional income.

For Scientific Community

Year: 2016-17

1. **Evaluation of parthenocarpic cultivars of cucumber under protected conditions for yield and other horticultural traits:**

   Greenhouse cucumber cultivars Oscar and Valleystar were identified as the highest yielders under naturally ventilated polyhouse, which were at par in performance with cvs. RS 03602833, Kian and Multistar. Evaluation of cucumber cultivars for various sensory parameters by heterogeneous panel of evaluators revealed highest overall score in cv. Multistar statistically at par with KUK-9 and 52-23.

2. **Evaluation of tomato cultivars under NVPH for yield and other horticultural traits.**

   Cultivar Bargad was identified as significantly highest yielder with maximum net realization in naturally ventilated polyhouse. Higher number of fruits per plant and minimum occurrence of blossom end rot were observed as major

contributing traits towards yield.

Production of planting material

Year: 2017-18					
Seed/Saplings			Planting Material		
Crop	**Cultivar**	**Quantity**	**Crop**	**Cultivar**	**Quantity**
Brinjal	Brinjal Seed (GNRB-1)	9.60 kg	EFY	Gajendra	2550 kg
Brinjal	Brinjal Seed (Surti Ravaiya)	11.35 kg	Little Gourd	GNLG-1	4312 Nos.
Brinjal	Brinjal Seedlings (GNBR-1)	56510 Nos.	Pointed Gourd	GNPG-1	464 Nos.
Brinjal	Brinjal Seedlings (Surti Ravaiya)	65148 Nos.	Sweet Potato	C-71	1200 Cuttings
Tomato	Tomato Seedlings (GT-2)	35710 Nos.	Sweet Potato	Bhukanti	1200 Cuttings
Chilli	Chilli Seedlings (GVC-111)	16061 Nos.	Drumstick	Drumstick plants	653 Nos.
Cauliflower	Cauliflower Seedlings	9500 Nos.			
Cabbage	Cabbage Seedlings	9540 Nos.			

EXTENSION SERVICES

- Participation in *Krishi Mahotsava*- a flagship programme of GoG.
- Diagnostic visits at farmers' fields.
- Organizing vegetable exhibition-cum-competition, Farmers' training, *shibir* etc.
- Dissemination of technology through publications.
- TV telecast and radio talks on various aspects of vegetable crops.
- "*Mera Gaon Mera Gaurav*" programme related activities.

TRANSFER OF TECHNOLOGY (ToT)



Interaction with farmers in *Krishi Mahotsava* an on/off-campus Training

Diagnostic visit at farmers' field

Training at Farmers' Field

On Farm interaction with farmers

Lecture as resource person in farmers' training

On Campus Training to Greenhouse Farmers

Diagnostic visit in the field of farmer- Bharatbhai Lallubhai Patel

Diagnostic visit in the field of farmer- Ashokbhai

Infrastructure Available

Department

- Well equipped laboratories (2) and class rooms.
- Canon copier.
- Wi-Fi facility.
- Naturally Ventilated Polyhouse and Net House for EPL activities.

Farm

- Experimental Area: 5.0 ha
- Naturally Ventilated Polyhouses: 03

- Tuber storage Godown: 01
- Borewell: 01

Dignitaries Visit: Glimpses

Dr. S. Ayyappan, Former Sec., DARE & DG, ICAR

Hon'ble Agriculture Minister Sh. Babubhai Bokhiriya & Dr. H.S. Gupta, DG, BISA

Sh. Jashabhai B. Barad, Hon'ble State Agriculture Minister, GoG

Sh. J.D. Dave, Joint Secretary (Agri.), GoG with Dr. B.N.Patel, Dean ACHF

Dr. B. Singh, Director IIVR- Varanasi

Dr. James George, PC-Tuber Crops, CTCRI- Thiruvananthapuram

Dr. P.K. Singh
Zonal Director, NHB, MoA, Gurgaon

Sh. Sanjay Prasad
Principal Secretary (Agri.), GoG

Sh. Chimanbhai D. Sapariya, Hon'ble Minister, Agriculture & Energy, GoG

Dr. J.S. Sandhu, DDG (Crop Science),ICAR

Visit of Monitoring and Review Team of Education Division, ICAR, New Delhi


Dr. K. V. Prabhu, Chairman, PPV& FR Authority, IARI, New Delhi visited the stall of ASPEE College of Horticulture and Forestry and showed keen interest in bio-diversified collection of Horticultural crops.