



RESEARCH REPORT



Research Chapter -4 2022-23

COLLEGE OF HORTICULTURE
ANAND AGRICULTURAL
UNIVERSITY



COLLEGE OF HORTICULTURE

Anand Agricultural University

Anand-388 110

Dr. N. I. Shah
Principal & Dean

☎ : (O) 02692-264076

E-mail : principalcoh@aau.in

No. AAU/CoH/ 49 / 2023

Dt. 05-04-2023

To,
The Director of Research and Dean PG Studies
Anand Agricultural University
Anand

Sub.: 19th Annual Report for research chapter-4 (2022-23)-Reg.

I am attaching herewith the separate word file regarding 19th Annual Report for research chapter-4 (Performa A & B) of College of Horticulture for the year 2022-23 as per the format.

Principal & Dean

College of Horticulture
Anand Agricultural University, Anand
19TH ANNUAL REPORT OF THE YEAR 2022-23
Research Chapter 4
Performa: A (Part I)

1. Importance of Research Centre / Department along with work carried out during 2022- 23 (in brief):

The prime mandate of College of Horticulture is to impart education in the field of horticulture science coupled conducting research on various disciplines like fruit, vegetable, flower as well as on postharvest technology. During the year 2022-23 following experiments were conducted under different departments of College of Horticulture:

Fruit Science Dept.:

- i. Effect of time and length of pruning on yield and quality of custard apple (*Annona squamosa* L.) under middle Gujarat conditions

Vegetable Science Dept.:

- i. Effect of integrated nutrient management on growth, yield and quality of onion
- ii. Effect of different time of transplanting and spacing on growth and yield of Knol-khol under middle Gujarat conditions

Floriculture and Landscape Architecture Dept.:

- i. Effect of spacing and nitrogen on growth, flowering, yield and shelf life of desi rose under middle Gujarat conditions
- ii. Effect of seed treatment on germination of foxtail palm (*Wodyetia bifurcata*)
- iii. Effect of different growing condition and media on growth and flowering of orchid.

Post Harvest Technology Dept.:

- i. Development of Production Technology for Bottle Gourd based Carbonated Beverage
- ii. Production of premium quality powder with maximum retention of essential oil using cryogenic grinding of dill seed.

Plant Protection Dept.:

- i. Evaluation of organic inputs against aphid infesting broccoli (*Brassica oleracea* var. *italica* L.)
- ii. Evaluation of eco-friendly inputs against sucking pests of potato
- iii. Bio-efficacy of ready mix fungicides against powdery mildew of fenugreek
- iv. Bio-efficacy of ready mix fungicides against powdery mildew of coriander

- v. Efficacy of nano-particles against powdery mildew of coriander (Feeler Trial)

Natural Resource Management Dept.:

- i. Evaluation of nutrient management modules in okra + cowpea - cabbage + fenugreek intercropping system
- ii. Effect of integrated nutrient management on growth and yield of potato (*Solanum tuberosum* L.)

Social Science Dept.:

- i. Growth in Area Production and Productivity of Vegetable Crops in Gujarat
- ii. Growth in Area, Production and Productivity of Spices and Flower Crops in Gujarat

Basic Science Dept.:

- i. Detection of late blight and early blight diseases of potato using deep learning
2. Research recommendations with photographs (2021-22):

I. Department of Plant Protection:

Management of aphid in coriander through insecticidal seed treatments and bio-pesticides

Recommendation for farmers:

Application of two sprays of *Lecanicillium lecanii* 1.15% WP (1 x 10⁹ cfu/g) 40 g per 10 litre of water mixed with sticker 0.1% (10 ml/ 10 litre of water) first at initiation of aphid and second at 15 days after first spray found effective against aphid infesting broccoli.



T3: *Lecanicillium lecanii* 1.15% WP



Control

II. Department of Post-Harvest Technology:

a. Development of Production Technology for Bottle Gourd based Carbonated Beverage

Recommendation for Entrepreneurs:

The entrepreneurs interested in the production of bottle gourd based carbonated beverage inclusive of pineapple and lime juices are advised to adopt processing technology developed by the Anand Agricultural University, Anand. The technology involves the formulation of the beverage at 12.50 ml of bottle gourd juice, 3.30 ml of pineapple juice, 4 ml of lime juice and 70 ml of sugar syrup followed by thermal processing at 95 °C with no hold and carbonation at 120 psi. The developed beverage can be stored safely in PET bottles for 90 days at the ambient condition.



Overview of Experiment

b. Production of premium quality powder with maximum retention of essential oil using cryogenic grinding of dill seed:

Recommendation for Entrepreneurs:

Entrepreneurs and agro-processing units involved in grinding of spices are advised to use the technology of cryogenic grinding developed by Anand Agricultural University, Anand for superior quality dill seed powder with higher retention of essential oil. For higher retention (2.10%) of essential oil, the cryogenic grinding of fennel seed at temperature of -60°C, sieve size of 0.8 mm and feed rate of 6 kg/h is recommended. Cryo-ground sample

stored in aluminum laminated zip lock pouch at refrigerated ($7\pm 1^{\circ}\text{C}$) condition retained higher (1.86%) essential oil.



Overview of Experiment

3. Output during 2022-23 [No. of trials allotted (new / ongoing) and conducted successfully]

No. of ongoing trails : 13

No. of new trails : 06

4. Salient achievements during the year with photographs and information (Other than approved recommendation): NIL

5. Variety/ Breed/ Machinery etc. Released / developed with brief information and photographs.: NIL

6. For breeding: Generation wise detail and new crosses made during the year: NIL

7. Seed production information:

Department of Floriculture and Landscape architecture

Planting materials production (2022-23)

Planting material	Target (Nos.)	Production(No s.)	Selling (Nos.)
Rooted cuttings, Grafts, Seedlings, Potted Plants etc	90950	114550	82751

Sr.No.	Flowers and Ornamental plants (Rooted cuttings, Grafts, Seedlings, Potted Plants etc)	Target (2022-23) (Nos.)	Selling (2022-23) (Nos.)
1	Rose (Deshi)	5000	1267
2	Mogra	2500	1315
3	Ixora	1000	794
4	Bogainvella	2000	1581
5	Chrysenthemum	500	2587
6	Hibiscus	2500	1874
7	Palm	100	156
8	Climbers	1500	944
9	Seasonal flower plants	2000	1655

10	Ornamental plants	25000	15072
11	Forest trees	5000	2816
12	Ornamental potted plants (big size earthan pot)	500	316
13	Ornamental potted plants (medium size earthan pot)	250	603
14	Ornamental potted plants (small size earthan pot)	500	363
15	Hanging Basket	100	29
16	Ornamental plants (large Poly bag)	500	404
17	Chrysanthemum seedling	5000	3650
18	Marigold seedling	15000	12450
19	Gaillardia seedling	2000	8950
20	Other seasonal flower seedlings	20000	25925
	Total ornamental plants (Nos.)	90950	82751

8. Project title and financial outlay under projects of:

Budget: 12987-16

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2022-23	54,00,000/-	53,90,738/-	9262/-	7,50,000/-	7,42,392/-	7,608/-

Budget: 12712-02

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2022-23	13,00,000/-	12,96,022/-	3978/-	-----	-----	-----

9. Awards / Honors etc. information with photographs:

Got Uttam Lekh Award in the month of October-2022, in the discipline of Dairy, Food Processing and Home Science subject titled “Kel Pakma Processing ane Mulyavardhan” for the year 2021-22 to writing in reputed AAU magazine krushi Govidya, 74(7), pp:36-39.

10. Important events

10 A. Seminar / Symposia / Conference / Training organized: Appendix - 1

10 B. University teachers who have participated in Seminar/Symposia/Conference /Training: Appendix - 2

10 C. Names and Details of dignitaries visited: NIL

**College of Horticulture
Anand Agricultural University, Anand
19TH ANNUAL REPORT OF THE YEAR 2022-23
Research Chapter 4
Performa: A (Part II)**

11. List of Research paper published during the year 2022-23:

No. of research papers published in scientific journal 2022-23	International Journal	04
	National Journal	19

Research Paper list:

i. International journal:

1. **Chaudhari G. R.**, Patel D. A., Parmar D. J., Patel K. C., Kumar S. (2023). Combining ability, heterosis and performance of grain yield and content of Fe, Zn and protein in bread wheat under normal and late sowing conditions, *PeerJ*, 11(1):14971.
2. **Chaudhari G. R.**, Patel D. A., Kalola A. D., Kumar S. (2023). Use of graphical and numerical approaches for diallel analysis of grain yield and its attributes in bread wheat (*Triticum aestivum* L.) under varying environmental conditions, *Agriculture*, 13(1):171.
3. Hebsale V. K., Panigrahy S. R., Nayak A. K., Pundir R. S., **Kumari P.** (2023). Factors influencing the knowledge level of fish consumers: An Explanatory Analysis, *Sustainability*, Accepted.
4. **Chaudhari G. R.**, Patel D. A., Kalola A. D., Kumar S. (2022). Graphical and numerical analysis of the components of gene effect on the quality traits of bread wheat (*Triticum aestivum* L.) under varying environmental conditions, *Agriculture*, 12(12):2055.

ii. National journal:

1. Warang O. S. and **Shah N. I.** (2022). Effect of round the year pruning and fertilizer doses on physico-chemical parameters of phalsa cv. Local. *The Pharma Innovation Journal*, 11(9):584-587.
2. Chaudhary H. L., **Shah N. I.** and Panchal B. (2022). Influence of organic sources on growth and yield of sapota cultivar kalipatti. *Scientist*, 1(3):2935-2941.
3. Magar S. D., **Shah N. I.** and Kshirsagar A.V. (2022). Effect of pre harvest bunch covers on post-harvest quality of banana (*Musa paradisiaca* L.) cv. Grand Naine. *Scientist*, 1(3):4578-4582.

4. Mahida S. V., **Shah N. I.** and Patel H. T. (2022). Influence of double pruning in a year and fertilizer application time on yield and quality parameters of phalsa (*Grewia asiatica* L.) cv. Local, *International Journal of Chemical Studies*, 10(3): 8-10.
5. Mahida S. V., **Shah N. I.** and Bhatt A. H. (2022). Effect of Time and Number of Pruning on Growth, Flowering and Fruitng Behaviour of Phalsa (*Grewia asiatica* L.) cv. Local, *Current Journal of Applied Science and Technology*, 41(18): 1-5.
6. Bhatt A. H., Arbat S. S., Raj D., Sitapara H. H. and **Shah N. I.** (2022). Standardization of 'Bhagwa' Pomegranate (*Punica granatum* L) Nectar. *Current Journal of applied science and technology*, 41(27): 1-10.
7. **Prajapati H. N.** and **Barad A. H.** (2022). Bio-efficacy of agrochemicals against bacterial canker (*Xanthomonas citri* pv. *citri*) in citrus. *The Pharma Innovation Journal*, 11(12):3978-3983.
8. Dodiya R. D., Bhatt N. A., **Barad A. H.**, and. Sisodiya D. B. (2022). Report of *Anisopteromalus calandrae* (Howard) (Hymenoptera: Pteromalidae) as a potential biocontrol agent of cigarette beetle, *Lasioderma serricorne* (Fabricius) (Coleoptera: Anobiidae) infesting tobacco seeds under storage condition from Gujarat, India. *Insect Environment*, 25 (3):459-461.
9. Dodiya R. D., and **Barad A. H.** (2022). Effectiveness of biopesticides against *Spodoptera litura* infesting groundnut under field condition. *The Pharma Innovation Journal*, 11(8):1601-1605.
10. Raval A. T., and **Barad A. H.** (2022). Population dynamics of mustard aphid, *Lipaphis erysimi* Kaltentbach infesting radish under middle Gujarat condition. *The Pharma Innovation Journal*, 11(8):1710-1713.
11. **Kumari P.**, Parmar D. J., M. Sathish Kumar, Lad Y. A. and Mahera A. B (2022). An artificial neural network approach for predicting area, production and productivity of Banana in Gujarat. *The Pharma Innovation Journal*, 11(4):816-821.
12. **Kumari P.**, Parmar D. J., M. Sathish Kumar, Lad Y. A. and Mahera A. B (2022). Forecasting area, production and productivity of mango in Gujarat by using an artificial neural network model, *The Pharma Innovation Journal*, 11(4):822-826.
13. **Kumari P.**, Parmar D. J., M. Sathish Kumar, Mahera A. B and Lad Y. A. (2022). Prediction of area, production and productivity of total fruit crops in Gujarat, *The Pharma Innovation Journal*, 11(5): 750-754.

- 14. Kumari P.,** Parmar D. J., M. Sathish Kumar, Mahera A. B and Lad Y. A. (2022). Evaluation of linear statistical models for predicting area, production and productivity of Sapota in Gujarat, *The Pharma Innovation Journal*, 11(5): 755-759.
- 15. Kumari P.,** Parmar D. J., M. Sathish Kumar, Mahera A. B and Lad Y. A. (2022). Comparison of Statistical Models for Prediction Area, Production and Yield of Citrus in Gujarat, *Biological Forum – An International Journal*, 14(2): 540-545.
- 16. Kalariya R. P. and Dudhat B. L.** (2022). Comparative Economics of Organic and Inorganic Turmeric Farmers In Middle Gujarat, *International Journal of Agriculture Sciences*, 14(15):11959-11962.
- 17. Solanki S. K., Patel H. K., Raval C. H. and Patel H. K.** (2022). Response of integrated nutrient management on irrigated wheat, *International Journal of Plant and Soil Sci.*, 34 (22):55-60.
- 18. Parmar M. R.** (2022). Effect of supercritical process parameters on phenolic compound, *Journal of Scientific Research and Reports*, 28(11):1-9.
- 19. Parmar M. R.** (2022). Effect of traydrying conditions on the bioactive compound of the papaya leave, *Current Journal of Applied Science and Technology*, 41(36):1-11.

12. List of research paper/abstract presented at seminar / symposium / conference etc. for 2022-23:

In International level seminar/symposium/conference	00
In National level seminar/symposium/conference	03

Paper/abstract list:

I. International journal: NIL

II. National journal:

- a. Dodiya R.D. and **Barad A. H.** (2022). Effectiveness of biopesticides against *Spodoptera litura* infesting groundnut under field condition. A paper was presented (poster) in the **National Conference** on “Natural farming for Sustainable Agriculture and National prosperity” held at SDAU, Sardarkrushinagar, Dantiwada. During 11-13 Nov., 2022.
- b. **Prajapati H. N., Barad A. H.,** Parmar R. G., and Litoriya N. S. (2022). Bio-efficacy of solvent based phytoextract against powdery mildew infesting fenugreek. A paper was presented (poster) in the IPS west zone symposium on “Current trends in plant disease detection, diagnosis and management” held at NAU, Navsari, during 16-17, Nov.2022,

- c. **Prajapati H. N. and Barad A. H. (2022).** Bio-efficacy of agrochemicals against bacterial canker (*Xanthomonas citri* pv. *citri*) in citrus. A paper was presented (orally) in the Fourth national conference on “Recent advances in Agriculture and allied sciences and pharmaceuticals and environmental sciences” held at B.V. David foundation, Chennai during 1, Oct., 2022.

i. Popular articles published for the year 2022-23:

1. **Gajera R. R.** and Ravani A. (2022). Ghauma Processing, Bakery Udyog, *Krushvi Govidya*, 75 (07), pp. 17-19.
2. **Gajera R. R.** (2022). *Krushvi Pakoma Processing ane Mulyvardhan*, *Krushvi Govidya*, 75 (05), pp. 24-37.
3. **Gajera R. R.** (2022). *Soyabean nu Processing ane Mulyavardhan*, *Krushvi Govidya*, 75 (02), pp. 28-32.,
4. Rajput R. L., **Gajera R. R.** (2022). *Papaiyama Mulyavardhan*, *Gujarat Bagayat Vikas*, 87: pp.14-18.
5. **Gajera R. R.** , Rajput R. L. (2022). *Jamfalma Mulyavardhan*, *Gujarat Bagayat Vikas*, 87: pp.70-73.
6. **Gajera R. R.** (2022). *Kelma Mulyavardhan*, *Gujarat Bagayat Vikas*, 87, pp 52-55.
7. **Gajera R. R.** (2022). *Naliyerima Mulyavardhan*, *Gujarat Bagayat Vikas*, 87, pp. 74-77.
8. **Gajera R. R.** (2022). *Falma Canning dwara Mulyavardhan*, *Gujarat Bagayat Vikas*, 87, pp. 80-82.
9. **Gajera R. R.** (2022). *Falmathi Juice dwara Mulyavardhan*, *Gujarat Bagayat Vikas*, 87: pp. 83-84.
10. **Gajera R. R.** (2022). *Soyabean nu Processing ane Mulyavardhan*, *Krushvi Govidya*, 75 (02), pp. 28-32.
11. **Chaudhari G. R.** (2022). *Breeding for Quality Traits in Castor. Agriculture & Food, E- Newsletter*, 179-182.
12. **Chaudhari G. R.**, Patel S, Ragi S. (2022). *Sex Expression in Castor. Agriculture & Food, E- Newsletter*, pp. 4-8.
13. **Chaudhari G. R.**, Patel, S., Ragi, S. (2022). *Radiation Induced Mutation Breeding in Papaya (Carica papaya L.)*, *Biotica Research Today*, 4 (1), pp. 074-076.
14. **Chaudhari G. R.** (2022). *Pesticide Pollution in Agriculture. Agriculture & Food, E- Newsletter*, pp. 214-216.

15. **Chaudhari G. R.** (2022). Chemical Mutagens. Agriculture & Food, *E- Newsletter*, pp. 6-8.
16. **Chaudhari G. R.** (2022). DUS Testing. Agriculture & Food, *E- Newsletter*, pp. 214-217.
17. **Chaudhari G. R.** (2023). Molecular Biology of Abiotic Stress Responses – Heat and Cold. Agriculture & Food, *E- Newsletter*, 193-195.
18. Dodiya, R.D., J.V. Italiya., and **Barad, A.H.** (2023). *Falpakoma falmakhi nu Sanklit vyavasthapa, krushi Jivan*, (7), pp.22-25.

13. Books / Book chapters published (2022-2023):

i. Books/ Booklets:

Sr. No.	Name of Book	Name of Authors	Name of Publisher
1.	Book on “Fal ane Shakbhajinu Parirakshan” (EXT-5:49:2022:1000, PP: 01-200)	R. L. Rajput, R. R. Gajera , N. I. Shah , P. C. Patel, S. A. Sipai	Director of Extension Education, Anand Agricultural University, Anand.
2.	Book on “Gunda, Khati Amla, Bijoru, Kerda ane Rayan ni Sanklit pak vyavstha” No. 88 July-Sep-2022	K. P. Kikani, B. N. Satodiya , A. H. Bhatt and H. S. Sitapara	Gujarat Bagayat Vikash Parishad, Anand.

ii. Book chapter:

Sr. No.	Name of Book	Book Chapter	Name of Authors	Name of Publisher
1	“Fal ane Shakbhajinu Parirakshan” pp 7-10	Fal ane shakbhaji ni agatyata	Shah N. I. Rajput R. L.	Director of Extension Education, Anand Agricultural University, Anand.
2		Fal ane Shakbhajima Rasayanik Padhatithi Parirakshan	R.L.Rajput, R.V. Prasad, R. R. Gajera	
3		Fal ane Shakbhajima Enzyme dwara Parirakshan.	R. R. Gajera , R.L.Rajput	
4.		Fal ane Shakbhajima Athavan dwara Parirakshan	R. R. Gajera , J.S.Doshi	
5.		Shakbhaji ane Falonu Freezing dwara Parirakshan	J. S. Doshi, R. R. Gajera	
6.		Vatana, Tuver ane Fansima Parirakshan	A. Ravani, R. R. Gajera ,	

			S. Anadani	
7.		Juice, Squash and Cordial jevi Banavato dwara Falu ane Shakhajinu Parirakshan	R.L. Rajput, R. R. Gajera , N.V.Soni	
8.	Advances in biological sciences and biotechnology	Forward and Reverse Genetic Approaches in Molecular Biology	Shridhar Ragi, Sheetal Patel, Gita R. Chaudhari	Integrated Publications New Delhi
9.		Unleashing Meiotic Crossover Frequency in Crops and Its Application in Plant Breeding	Gita R. Chaudhari , Shridhar Ragi	
10.	Emerging Trends in Agriculture Sciences	Wheat Sowing Patterns	Gita R. Chaudhari	
11.	Glimpses of Innovative Research in Life and Plant Sciences	Biosafety Issue in Genetic Engineering	Gita R. Chaudhari , Pooja P. Parmar, Shridhar Ragi	
12.	Essentials of Plant Biotechnology	Production of Golden Rice using Genetic Engineering	Gita R. Chaudhari , Divya Chavda, Shridhar Ragi	
13.	Advances in Agricultural Biotechnology	Protein Bio- Synthesis/Translation in Prokaryotes & Eukaryotes	Gita R. Chaudhari , Sheetal Patel, Shridhar Ragi, Krishna Prakash	AkiNik Publications
14.	Pests and Disease Management of HORTICULTURAL CROPS (2023)	Diseases of Papaya and their Integrated Management	R. Vaghasiya H. N. Prajapati S. Banik N.K. Adhikary A. H. Barad	Biotech Books, New Delhi
15.	Changing Face of Agriculture, Agri- Business, Agriculture Marketing and Organic Farming- Innovation and Strategies (Vol.-I)	Major Diseases of Citrus and Their Management	N. Jyothi H. N. Prajapati A. H. Barad C. S. Maiti N. K. Adhikary	Iterative International Publishers

APPENDIX-1**Seminar / Symposia / Conference / Training organized 2022-23:**

Name of events	Duration	Organize/Sponsored agency
12 Week Certificate Course on "Data Analytics using Python"	06-08-2022 to 22-10-2022	ICAR, New Delhi and NHAEP-CASST, AAU

APPENDIX-2**University teachers who have participated in Seminar/Symposia/Conference Training during the year 2022-23:**

Sr. No.	Name of Teacher/ Scientist	Participated	Duration	
			From	to
1.	Dr. D. R. Paradva, Dr. B. L. Dudhat and Dr. C. H. Raval	One day Seminar "Prakuratic Kheti ma pak sanrakshan" Jointly Organized by PPAG and AAU, Anand at AAU, Anand	05-04-2022	05-04-2022
2.	Dr. Prity Kumari and Dr. B. L. Dudhat	Two days Seminar "Satellite Farming" Webinar Organized by NAHEP and AAU, Anand at AAU, Anand	09-05-2022	10-05-2022
3.	Dr. B. L. Dudhat	One day Seminar "Agro-Ecology and Biodiversity Conservation" Jointly Organized by Department of Seed Science, AAU, Anand and GEER at AAU, Anand	31-05-2022	31-05-2022
4.	Dr. B. N. Satodiya	State level workshop " Bayat Pakoma Nursery Vyavasthapan" organized by College of Horticulture, AAU, Anand, Horticulture Department, Gandhionagar, Alumni Association COH, AAU Anand	07-06-2022	07-06-2022
5.	Dr. B. L. Dudhat	Two days Seminar "Organic Farming – Production and Marketing Strategies for Rural Youth" Organized by MANAGE and NAU, Bharuch	27-07-2022	29-07-2022
6.	Dr. Prity Kumari	Two Days National Seminar on "Modelling Techniques for Agricultural Applications" organized by the Center for Agricultural Market Intelligence under NAHEP-CAAST, AAU, ANAND in collaboration with the Department of Basic Sciences and Humanities, BACA, AAU, Anand	05-08-2022	06-08-2022
7.	Dr. H. N. Prajapati	Fourth national conference on "Recent advances in Agriculture and allied sciences and pharmaceuticals and	01-10-2022	01-10-2022

		environmental sciences at B.V. David foundation, Chennai		
8.	Dr. B. L. Dudhat, Dr. A. H. Barad, Dr. H. N. Prajapati, Mr. Urmil Chaudhari and Mr. P. A. Maheriya	21 days “Role of Science and Technology in Sustainable Agriculture, Horticulture, Animal Husbandry and Allied Sector: A Retrospective and Prospective Approach” Organized by ICAR-IGFRI Palampur and NADCL J & K	09-11-2022	29-11-2022
9.	Dr.B. N. Satodiya	National Conference on “ Natural Farming for Sustainable Agriculture and Prosperity organized by Sardar Krishinagar Dantiwada Agricultural University,Akshay Krishi Parivar, Kukma,Kachchh and Royal Association for Science-Led Socio Cultural Advancement,New Delhi	11-11-2022	13-11-2022
10.	Dr. A. H. Barad	IPS west zone symposium on Current trends in plant disease detection, diagnosis and management at NAU, Navsari	16-11-2022	17-11-2022
11.	Dr. C. H. Raval	ICAR sponsored 21 days winter school on “Water productivity enhancement in scarcity zones: Approaches and Applications at SDAU, S.K.Nagar (Gujarat)	18.01.2023	07.02.2023
12.	Dr. A. H. Barad Dr. H. N. Prajapati and Dr. C. H. Raval	Statae level seminar on “ <i>Khetima Aatma nirbharta mate Prakrutik kheti</i> ” organized by GASS & Gujarat Vidhyapith, Ahemedabad, Gujarat	02-02-2023	02-02-2023
13.	Dr. C. H. Raval	Two day workshop on value addition and marketing of millets by NAHEP , AAU, Anand (Gujarat)	20.02.2023	21.02.2023
14.	Dr. A. H. Barad Dr. H. N. Prajapati and Dr. C. H. Raval	Statae level seminar on “ <i>Jaminjanya rog-jivatonu sanklit niyantran</i> ” organized by PPAG & JAu, Junagadh, Gujarat	24-02-2023	24-02-2023

College of Horticulture
Anand Agricultural University, Anand
19TH ANNUAL REPORT OF THE YEAR 2022-23
Research Chapter 4
Performa: B

Name of Unit: College of Horticulture

Details of Seminar/ Symposia/ Conference/ Training attended by the faculties

1	Total number of national seminar attended by total faculty in the year	01
2	Total number of international seminar attended by total faculty in the year	00
3	Total number of workshop & conferences attended by total faculty in the year	03
4	Total number of research papers presented by faculty at conferences in India & abroad during the year	03
5	Number of research contribution to Scopus till date by permanent faculty	06
6	Number of research contribution to Scopus by permanent faculty	06

7	Total number of <u>research publications</u> of <u>existing permanent faculty</u> in <u>national journals</u>	19
----------	---	-----------

Details of Research Publications (National):

Name of Faculty Member	Name of the Research Paper	Year of Publi.	Name of the Journal
N. I. Shah	Effect of round the year pruning and fertilizer doses on physico-chemical parameters of phalsa cv. Local	2022	The Pharma Innovation Journal
	Influence of organic sources on growth and yield of sapota cultivar kalipatti		Scientist
	Effect of pre harvest bunch covers on post-harvest quality of banana (<i>Musa paradisiaca</i> L.) cv. Grand Naine		International Journal of Chemical Studies
	Influence of double pruning in a year and fertilizer application time on yield and quality parameters of phalsa (<i>Grewia asiatica</i> L.) cv. Local		Current Journal of Applied Science and Technology
	Effect of Time and Number of Pruning on Growth, Flowering and Fruitng Behaviour of Phalsa (<i>Grewia asiatica</i> L.) cv. Local		
	Standardization of 'Bhagwa' Pomegranate (<i>Punica granatum</i> L) Nectar		

H. N. Prajapati and A. H. Barad	Bio-efficacy of agrochemicals against bacterial canker (<i>Xanthomonas citri</i> pv. <i>citri</i>) in citrus.	2022	The Pharma Innovation Journal
A. H. Barad	Report of <i>Anisopteromalus calandrae</i> (Howard) (Hymenoptera: Pteromalidae) as a potential biocontrol agent of cigarette beetle, <i>Lasioderma serricorne</i> (Fabricius) (Coleoptera: Anobiidae) infesting tobacco seeds under storage condition from Gujarat, India.	2022	Insect Environment
	Effectiveness of biopesticides against <i>Spodoptera litura</i> infesting groundnut under field condition		The Pharma Innovation Journal
	Population dynamics of mustard aphid, <i>Lipaphis erysimi</i> Kalténbach infesting radish under middle Gujarat condition.		
Prity Kumari	An artificial neural network approach for predicting area, production and productivity of Banana in Gujarat	2022	The Pharma Innovation Journal
	Forecasting area, production and productivity of mango in Gujarat by using an artificial neural network model		
	Prediction of area, production and productivity of total fruit crops in Gujarat		
	Evaluation of linear statistical models for predicting area, production and productivity of Sapota in Gujarat		
	Comparison of Statistical Models for Prediction Area, Production and Yield of Citrus in Gujarat		Biological Forum – An International Journal
C. H. Raval	Response of integrated nutrient management on irrigated wheat	2022	International Journal of Plant and Soil Science
M. R. Parmar	Effect of supercritical process parameters on phenolic compound	2022	Journal of Scientific Research and Reports
	Effect of traydrying conditions on the bioactive compound of the papaya leave		Current Journal of Applied Science and Technology
B. L. Dudhat	Comparative Economics of Organic and Inorganic Turmeric Farmers In Middle Gujarat,	2022	International Journal of Agriculture Sciences
8.	Total number of <u>research publications</u> of <u>existing permanent faculty</u> in <u>international</u> journals:		04
Details of Research Publications (International):			
Name of Faculty Member	Name of Faculty Member	Year of Publication	Name of the Journal

Geeta. R. Chaudhari	Graphical and numerical analysis of the components of gene effect on the quality traits of bread wheat (<i>Triticum aestivum</i> L.) under varying environmental conditions	2022	Agriculture
	Use of graphical and numerical approaches for diallel analysis of grain yield and its attributes in bread wheat (<i>Triticum aestivum</i> L.) under varying environmental conditions	2023	
	Combining ability, heterosis and performance of grain yield and content of Fe, Zn and protein in bread wheat under normal and late sowing conditions		PeerJ
Prity Kumari	Factors influencing the knowledge level of fish consumers: An Explanatory Analysis	2023	Sustainability
9.	Total number of books published by existing permanent faculty in the year		02

Number and value of research projects undertaken by the University with various organization in the year		
Sr. No.	Research Projects	Number / Value
1	Number of research projects	NIL
2	Total value of research projects (Rs. Lakhs)	
Sr. No.	Consultancy Projects	Number / Value
1	Number of consultancy projects	3
2	Total value of consultancy projects (Rs. Lakhs)	14.87
Details about Patent and Intellectual Property Rights (IPRs) filed by the University		
Sr. No.	Patents	Number
1	No. of Patents Filed	NIL
2	No. of Patents Published	
3	No. of Patents Granted	
4	No. of Patents Licensed	
5	Intellectual Property Rights (IPRs)	
6	Total earning from Patents (in Rupees)	
Awards / Fellowship		
1	Number of prestigious national & international awards received by the permanent faculty	NIL
2	Total number of permanent faculties received Research awards	
3	Total number of permanent faculties awarded Emeritus Fellowship	