



RESEARCH REPORT



Research Chapter -4 2023-24

COLLEGE OF HORTICULTURE
ANAND AGRICULTURAL
UNIVERSITY



ડો. એન. આઈ. શાહ
આચાર્ય અને વિદ્યાશાખાધ્યક્ષશ્રી

બાગાયત મહાવિદ્યાલય

આણંદ કૃષિ યુનિવર્સિટી

આણંદ- ૩૮૮ ૧૧૦

☎ : (ઓ) : ૦૨૬૯૨-૨૬૪૦૭૬

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જા.નં. આકૃયુ/બા.મ./ ૧૨૫ /૨૦૨૪

તા. ૨૨.૦૪.૨૦૨૪

પ્રતિ,
સંશોધન નિયામક અને
અનુસ્નાતક વિદ્યાશાખાધ્યક્ષશ્રી
આણંદ કૃષિ યુનિવર્સિટી
આણંદ

વિષય: આણંદ કૃષિ યુનિવર્સિટીનો વર્ષ ૨૦૨૩-૨૪ ના વાર્ષિક અહેવાલ બાબત....
સંદર્ભ: જા.નં.આકૃયુ/સંશો/ટી-૩/૧૨૧/૨૦૨૪ તા. ૦૮/૦૪/૨૦૨૪

સવિનય ઉપરોક્ત વિષય અને સંદર્ભ પત્ર અન્વયે જણાવવાનું કે, આણંદ કૃષિ યુનિવર્સિટીના વર્ષ ૨૦૨૩-૨૪ ના વાર્ષિક અહેવાલ તૈયાર કરવા માટે અત્રેની બાગાયત મહાવિદ્યાલયનો વાર્ષિક અહેવાલ વર્ષ ૨૦૨૩-૨૪ (રીસર્ચ ચેપ્ટર-૪) નિયત પ્રફોર્મ - A અને B સામેલ રાખી મોકલી આપવામાં આવે છે.

- સામેલ: (૧) પ્રફોર્મ - A (Part-I)
(૨) પ્રફોર્મ - A (Part-II)
(૩) પ્રફોર્મ - B

આચાર્ય અને વિદ્યાશાખાધ્યક્ષશ્રી
બાગાયત મહાવિદ્યાલય

College of Horticulture
Anand Agricultural University, Anand
20TH ANNUAL REPORT OF THE YEAR 2023-24
Research Chapter 4
Performa: A (Part I)

1. Importance of Research Centre / Department along with work carried out during 2023- 24 (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 2023-24 following experiments were conducted under different departments of College of Horticulture:

Ongoing experiment conducted

Sr. No.	Title of the experiment
Department of Fruit Sciences	
1.	Effect of time and length of pruning on yield and quality of custard apple (<i>Annona squamosa</i> L.) under middle Gujarat conditions
Department of Vegetable Sciences	
1.	Effect of integrated nutrient management on growth and yield of onion
2.	Effect of different time of transplanting and spacing on growth and yield of Knol-khol under middle Gujarat conditions
Department of Floriculture and Landscape Architecture	
1.	Effect of different growing condition and media on growth and flowering of orchid
Department of Natural Resource Management	
1.	Evaluation of nutrient management modules in okra + cowpea - cabbage + fenugreek intercropping system
Department of Post-Harvest Technology	
1.	Development of reduced sugar aonla beverage utilizing stevia
2.	Standardization of drying technology for bael leaves powder
Department of Plant Protection	
1.	Effect of eco-friendly inputs against aphid infesting vegetable cowpea
2.	Bio-efficacy of ready mix fungicides against powdery mildew of coriander
3.	Efficacy of nano-fungicides against powdery mildew of coriander
Department of Basic Sciences	
1.	Detection of late blight and early blight diseases of potato using deep learning
Department of Social Sciences	
1.	Growth in Area Production and Productivity of Spices and Flower Crops in Gujarat

New experiments 2023-24

Sr. No.	Title of the experiment
I. Department of Floriculture and Landscape Architecture	
1.	Effect of hydroponic methods on growth, yield and quality of mint (<i>Mentha arvensis</i> L.)
2.	Effects of growing method and media on the vegetative growth, yield and cut flower quality of Gypsophila (<i>Gypsophila paniculata</i> L.) under naturally ventilated polyhouse.
II. Department of Vegetable science	
1.	Effect of growing condition and media on growth and yield of capsicum under soilless cultivation
III. Department of Plant Protection	
1.	Evaluation of different modules against major lepidopteran insect-pests infesting cabbage
2.	Bio-efficacy of insecticides against fruit borers infesting jamun
3.	Evaluation of ready mix fungicides against Alternaria blight of cluster bean
IV. Department of Natural Resource Management	
1.	Nutrient management on growth and yield of turmeric (<i>Curcuma longa</i> L.)
V. Department of Social Sciences	
1.	“Crop Diversification in Ahmedabad District”
VI. Department of Basic Sciences	
1	Machine Learning Approaches to Irrigation Water Quality parameters prediction

P. G. Students experiments 2023-24

Sr. No.	Title of the experiment
I. Department of Fruit Sciences	
1.	Effect of Organic nutrient management on growth, yield and quality of banana cv. Grand Naine
2.	Standardization of different levels and split application of nitrogen on sweet orange cv. Phule Mosambi
3.	Effect of biostimulants and bioformulations on growth, yield and quality of Guava cv. Allahabad Safeda
4.	Effect of micronutrients on growth, yield and quality of sweet orange cv. Phule Mosambi
II. Department of Vegetable Sciences	
1.	Comparative study of organic and natural farming with different plant geometry for growth, yield and quality of vegetable clusterbean cv. <i>Anand Bahar</i>
III. Department of Floriculture and Landscaping	
1.	Effect of different growing conditions and seed treatment on germination and growth of Bismarck palm (<i>Bismarckia nobilis</i> L.)

2.	Effect of nitrogen management through organic sources on growth and flower yield of chrysanthemum (<i>Chrysanthemum morifolium</i> R.) var. IIHR - 6
3.	Effect of different spacing and time of Pinching on growth and flower yield of chrysanthemum (<i>Chrysanthemum morifolium</i> L.) cv. Ratlam Selection
IV. Department of Plant Protection	
1.	Biology and management of aphid, <i>Lipaphis pseudobrassicae</i> (Davis) infesting broccoli

2. Research recommendations with photographs (2023-24):

I. Department of Floriculture and landscape architecture

Title: Effect of seed treatment on germination of foxtail palm (*Wodyetia bifurcata*)

Recommendation for Nursery growers:

Nurserymen are recommended to grow foxtail palm seeds in a poly tunnel (walk-in tunnel) with seed soaking for two days in a solution of Gibberellic acid 1000 mg/lit water for early germination, higher survival percentage and quality planting material.



T1 :Direct Sowing



T4: Seed soaking in 1000 mg/lit Gibberellic acid for two days

II. Department of Natural Resource Management

Title: Effect of integrated nutrient management on growth and yield of potato (*Solanum tuberosum* L.)

Recommendation for farming community:

The farmers of middle Gujarat agro climatic zone growing potato are recommended to apply 75% RDF (165-82-165 NPK kg/ha) from chemical fertilizer+ 25% RDN through FYM (9 t/ha) for getting higher yield and net return.



75 % RDF + 25 % RDN through FYM



20 t FYM + 100 % RDF (220:110:220)

III. Department of Plant Protection:

1. Title: Evaluation of eco-friendly inputs against sucking pests of potato

Recommendation for farmers:

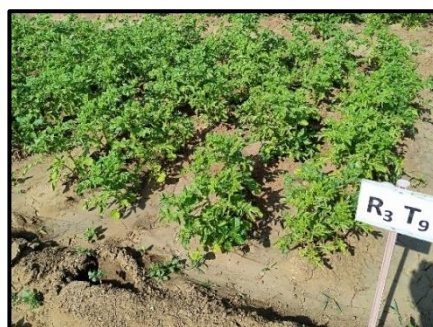
Farmers of Gujarat growing potato are recommended to apply three sprays of either tobacco decoction 2 per cent (200 g/ 10 litres water) or neem oil 0.5 per cent (50 ml/ 10 litres water) first at initiation of pests and subsequent two sprays after 15 days interval for effective management of sucking pests viz., jassid, whitefly and thrips.

Notes:

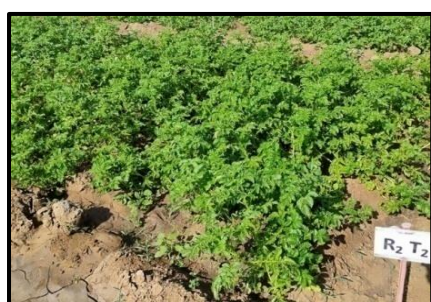
1. Add sticker (10 ml/ 10 litres water) in neem oil 0.5%.
2. Method of preparation of tobacco decoction 2% (cold method): Take 200g of tobacco dust and soak in one litre of water, filter it with muslin cloth next day and add 9 litre of water to make it 2%.



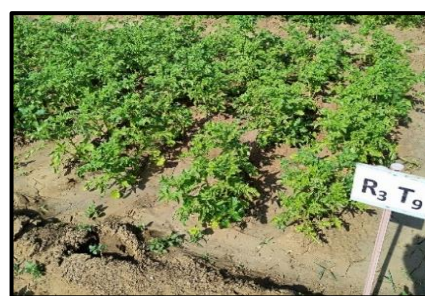
T2: Neem oil 0.5%



Control



T8: Tobacco decoction (Cold method) 2%



Control

2. Title: Bio-efficacy of ready mix fungicides against powdery mildew of fenugreek

Scientific Recommendation:

Application of two spray of Tebuconazole 10% + sulphur 65% WG, 0.187% (25 g /10 lit of water) first at initiation of powdery mildew and second at 15 days after first spray found effective against powdery mildew of fenugreek.



T5- Tebuconazole 10% + sulphur 65% WG @ 0.187%



T11-Control

IV. Department of Basic Science:

Detection of late blight and early blight diseases of potato using deep learning

Recommendation for Scientific Community:

It is recommended that custom Convolutional Neural Network (CNN) architecture developed for detection of late blight and early blight diseases of potato can be utilized for other crop disease identification based on its proven high accuracy rate of 97%, along with its computational efficiency, with reduced number of parameters relative to established models like VGG 16 and AlexNet.

V. Department of NRM

Other Agency project: 01

Efficacy of SA-23-24 (Bio-stimulant) application on yield, quality and soil properties in Vegetable Cluster bean (Guar) sponsored by Sarvoday Agro, A-6 Pushkar Park, Nr Gujarati School, Baben, Ta. Bardoli, Di. Surat 394 601

3. Output during 2023-24 [No. of trials allotted (new / ongoing) and conducted successfully]

No. of ongoing trials : 12
No. of new trials : 09

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

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 (2023-24)

Planting material	Target (Nos.)	Production (Nos.)	Selling (Nos.)
Flowers and Ornamental plants (Rooted cuttings, Grafts, Seedlings, Potted Plants)	107700	125000	77959

Sr. No.	Flowers and Ornamental plants (Rooted cuttings, Grafts, Seedlings, Potted Plants etc)	Target (2023-24) (Nos.)	Selling (2023-24) (Nos.)
1	Seasonal flower seedlings	30000	31375
2	Ornamental plants	25000	21272
3	Annual chrysanthemum seedling	10000	2900
4	Gaillardia seedling	10000	8350
5	Chrysanthemum	3000	2375

6	Mogra	1500	1065
7	Ornamental potted plants (L/M/S sizes earthen/plastic pots)	1500	1820
8	Forest trees	5000	1574
9	Hibiscus	2500	1271
10	Medicinal and aromatic plants	1500	1411
11	Climbers	3000	1032
12	Bogain vellia	3000	822
13	Seasonal flower plants	2000	773
14	Ixora	2000	755
15	Rose	3000	452
16	Ornamental plants (L/M/S sizes poly grow bags)	1000	375
17	Palm	1500	301
18	Hanging Basket	200	36
	Total ornamental plants (Nos.)	107700	77959

8. Project title and financial outlay under projects of:

Title: Upgradation of the Horticulture wing to college of Horticulture at AAU

Budget: 12987-16

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2023-24	82,00,000/-	8,173,738/-	26,262/-	7,36,000/-	735,522/-	478/-

Title: Land scaping at AAU Budget: 12712-02

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2023-24	17,00,000/-	16,92,033/-	7,967/-	----	-----	----

Title: Research and Demonstration center for terrace gardening and soilless cultivation, Anand Budget: 12993-27

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2023-24	5,00,000/-	4,99,393/-	607/-	30,00,000/-	30,00,000/-	0.00

Title: Research on integrated approaches for pest and disease management in horticultural crops, Anand Budget: 12993-28

Year	Recurring			Non- Recurring		
	Sanction grant	Expenditure	Balance	Sanction grant	Expenditure	Balance
2023-24	4,00,000/-	3,91,977/-	8023/-	7,92,000/-	7,91,674/-	326/-

9. Awards / Honors etc. information with photographs: NIL

10. Important events

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

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

C. Names and Details of dignitaries visited: NIL

**College of Horticulture
Anand Agricultural University, Anand**

20TH ANNUAL REPORT OF THE YEAR 2023-24

Research Chapter 4

Performa: A (Part II)

11. List of Research paper published during the year 2023-24:

No. of research papers published in scientific journal 2023-24	International Journal	10
	National Journal	17

Research Paper list:

i. International journal:

1. Pardava D.R., Patel M.J., Ram Bhavin and Kacha H.L. Effects of post-shooting sprays and bunch covering on yield attributes of Willium banana (*Musa paradisiaca* L.) International Journal of Agricultural Sciences, Volume 20 | Issue 1 | January, 2024 | 108-114
2. Kumari Prity, Goswami V, N. H, Pundir RS (2023). Recurrent neural network architecture for forecasting banana prices in Gujarat, India. *PLoS ONE*, 18(6): e0275702. <https://doi.org/10.1371/journal.pone.0275702>.
3. Harshith, N., Kumari, Prity. (2024). Memory based neural network for cumin price forecasting in Gujarat, India. *Journal of Agriculture and Food Research*. 15: 101020. <https://doi.org/10.1016/j.jafr.2024.101020>
4. Sathish Kumar M., Kumari Prity., Maria S. and Teena L. B. (2024). Potato and potato seed production under contract farming- A study from empirical evidence of case studies, *Potato Research*. <https://doi.org/10.1007/s11540-023-09675-z>
5. Warang O.S., Shah N.I. and Jadav N.J. (2023). Optimizing phalsa (cv. Local) growth, flowering, and yield parameters through round-the-year pruning and fertilizer management. *Journal of Applied Horticulture*, 25(2): 117-119, ISSN: 0972-1045
6. Chaudhary H. L., Shah N. I. and Rathod K.D. (2024). Effect of Organic Sources on Soil and Leaf Nutrient Status of Sapota [*Manilkara achras* (Mill.) Fosberg] cv. Kalipatti. *International Journal of Plant & Soil Science* Volume 36, Issue 3, Page 82-91, 2024; Article no. IJPSS.111718 ISSN: 2320-7035
7. Dudhat B. L. and Patel N. D. 2023 “Comparing Cost Of Cultivation and Scale of Finance of Major Crops in Anand & Vadodara District of Gujarat” *International Journal of Agriculture Sciences* ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 15, Issue 6, 2023, pp.-12428-12431.
8. Raval C.H., Satodiya B.N., Patel A. J. and Parekh D.D. (2024) Effect of Organic Sources of Nutrients on Yield, Quality, Soil Fertility Status and Economics of Onion (*Allium cepa* L.), *International Journal of Plant & Soil Science*, 2024 - Volume 36 [Issue 5], Page: 613-620

9. Raval C.H., Satodiya B.N., Patel A. J. and Parekh D.D. (2024) Influence of Organics Nutrient Management on Growth and Yield Attribute of Onion (*Allium cepa* L.), Biological Forum – An International Journal, 16 (1): 319-322.
10. Patel A.J., Satodiya B.N. and Bhanvadia A.S. (2023). Response of Varieties to Foliar Application of Zn and Fe for Yield and Quality Parameters of Okra. Biological Forum – An International Journal.15(4):570-57

ii. National journal:

1. Pardava D.R., Patel M.J., Ram Bhavin and Kacha H.L. (2023). Impact of post-shooting sprays and protective covers on fruit quality attributes banana (*Musa paradisiaca* L.) cv. grand naine. *The Pharma Innovation Journal* 2023; 12(12): 3408-3413.
2. Chaudhari, U. C., Maheriya, P. A., and Shah, N. I. (2023). "Evaluation of different chrysanthemum genotypes for growth and yield parameters under middle Gujarat Agro-climatic Zone." *The Pharma Innovation Journal* 2023; 12(12): 1937-1940
3. Maheriya, P. A., Satodiya, B. N., Chaudhari, U. C., and Lodaya, B. P. (2023). "Comparative study of growing condition and integrated nutrient management on growth and yield of broccoli cv. Pusa KTS-1." *The Pharma Innovation Journal* 2023; 12(8): 1171-1175
4. Chaudhary, A. R., Shah, N. I., Parmar, A. B., Chaudhari, U. C. and Kachhad, P. G. (2023). "Influence of media and nutrient on flowering and flower yield of pot grown Kashmiri rose." *The Pharma Innovation Journal* 2023; 12(9): 1900-1902
5. Chaudhari, Gita R., Prakash Krishna., Patel, Sheetal R., Chavda Divya., Shekhawat Neelam., Ragi Sridhar and Supritha Raj D.S. (2023). Secondary metabolites production in plant tissue culture. *The Pharma Innovation Journal*, 12(9):2198-2208.
6. Patel Sheetal R., Patel Ritesh K., Chaudhari Gita R., Supritha Raj D.S. and Ragi Shridhar (2023). Rice root riposte to drought stress: Morphological and molecular apparatus. *The Pharma Innovation Journal*, 12(11):2175-2188.
7. Barad A. H., Prajapati H.N. and Dodiya R.D. (2023). Evaluation of different doses of insecticides against aphid, *Macrosiphoniella sanbornii* and coccinellids in chrysanthemum ecosystem, *The Pharma Innovation Journal*, 12(6), 2918-2923.
8. Italiya J.V., Kalasariya R.L., Dodiya R.D., Barad A. H. and Patel N.A.(2023). Economically management of thrips by insecticides in chili under field condition, *The Pharma Innovation Journal*, 12(4), 1371-1374.
9. Dodiya R. D., Barad A. H., Pathan N. P. and Raghunandan B. L. (2023). Trichogramma: a promising biocontrol agent, *International Journal of Economic Plants* ,10(3), 192-199.
10. Dodiya R. D., Barad A. H., Italiya J. V., Pathan N. P. and Bhatt N. A.(2023). Host susceptibility of tobacco leaf eating caterpillar (*Spodoptera litura* F.) under laboratory condition, *International Journal of Bio-resource and Stress Management*, 14(8), 1186-1195, 2023.

11. Dodiya R. D., Chachpara B. A., Barad A. H., Prajapati H. N.(2023). First report of seed weevil, *Curculio c-album* Fabricius infesting on jamun, *Syzygium cuminii* (L.) Skeels from Gujarat, India, *Emergent Life Sciences Research*, 9(2), 3642.
12. Dodiya R. D., Barad A. H., Italiya J. V., Prajapati H. N.(2024). Impact of Weather Parameters on Population Dynamics of Tobacco Leaf Eating Caterpillar, *Spodoptera litura* (F.) Infesting Groundnut, *Environment and Ecology*, 42 (1A) : 301-306.
13. Prajapati H.N. and Barad A. H. (2023). Effect of hot water treatment on papaya fruit peel infected with fruit rot (*Colletotrichum domatium*), *The Pharma Innovation Journal*, 12(12): 1125-1127.
14. Suthar Y.M., Prajapati H.N., Barad A.H. and Desai S.G. (2023). Isolation, pathogenicity and identification of *Xanthomonas citri* pv. *citri* causing citrus canker disease in Gujarat, *The Pharma Innovation Journal*, 12(12): 3183-3188.
15. Suthar Y.M., Prajapati H.N., Barad A. H. and Desai S.G (2023). In-vitro evaluation of different agrochemicals and medicinal plant extracts against *Xanthomonas citri* PV. *Citri* causing citrus canker, *The Pharma Innovation Journal*, 12(12): 3228-3231.
16. Badi R., Patel H. K., Patel K. C., Patel P. M., Raval C. H., Chavda C. P. (2023). Micronutrients enriched organic manure and biofertilizer as influenced on multi-cut fodder oat *Avena sativa* (L.), *Life Sci Res* (2023) 9(2): 120-130.
17. Patel A.J., Satodiya B.N., Rathod K.D. and Dhruv J.J. (2023). Influence of varietiesto foliar application of Zn and Fe for growth, yield and quality of okra. *The pharma Innovation Journal*. 12(12): 1954-1958.

12. List of research paper/abstract presented at seminar / symposium / conference etc. for 2023-24:

In International level seminar/symposium/conference	03
In National level seminar/symposium/conference	04

Paper/abstract list:

I. International journal:

1. Chaudhari Gita R., Patel D. A., Parmar D. J. (2024). Identifying heterotic interactions in bread wheat (*Triticum aestivum* L.) for grain yield and its components under normal and late sown condition on International Symposium on Plant Biology and Functional Genomics (ISPBFG 2024)' organized by the Department of Plant Sciences, University of Hyderabad, from March 13-15.
2. Prajapati H. N. and Barad A. H.(2023). Management of citrus gummosis caused by *Phytophthora* sp., presented at at ISMPP 3rd Asian Congress on Plant Pathology: Plant and Soil Health Management for a Better Tomorrow on Feb. 07-10.
3. Ghetiya R., Chandan G. Y. and Kumari Prity (2023). Price Forecasting Models for Rice in West Bengal, India. An abstract presented in the International Conference on “Driving Agriculture Forward: Recent Trends and Innovations in Agricultural Market Intelligence” held at Center for Agricultural Market Intelligence Under NAHEP-

CAAST, IABMI, Anand Agricultural University, Anand, Gujarat, during 11-13 December 2023.

II. National journal:

1.	Barad A. H. and Prajapati H. N. (2023). Management of aphid in coriander through insecticidal seed treatments and foliar application of bio pesticides at ISMPP 42 nd Annual Conference and National Symposium on Plant Health Management: A way forward for food safety, security and sustainability on May 10-12.
2.	Italiya J. V., Kalasariya R. L., Dodiya R. D., Barad A. H. and Patel N. A.(2023). Economically management of thrips by insecticides in chilli under field condition at ISMPP 42 nd Annual Conference and National Symposium on Plant Health Management: A way forward for food safety, security and sustainability on May 10-12, 2023.
3.	Prajapati H. N., Barad A. H. and Gohel N. M. (2023). Evaluation of organic inputs against major foliar diseases of turmeric at ISMPP 42 nd Annual Conference and National Symposium on Plant Health Management: A way forward for food safety, security and sustainability on May 10-12, 2023.
4.	Dodiya R. D., Barad A. H., Italiya J. V. and Pathan N. P.(2023). Bio-efficacy of insecticides against tobacco leaf eating caterpillar infesting groundnut at ISMPP 42 nd Annual Conference and National Symposium on Plant Health Management: A way forward for food safety, security and sustainability on May 10-12, 2023.

i. Popular articles published for the year 2023-24:

1.	Gajera R. R. (2023). <i>Kel Pakma Mulyavardhan</i> , 76 (07) pp: 33-37. <i>Krusha Govidya</i> , ISSN2320-8902.
2.	Gajera R. R. (2023). <i>Dungalini Jalavani ane Mulyavardhan</i> , 76 (08) pp: 22-26. <i>Krusha Govidya</i> , ISSN2320-8902.
3.	Macwana Payal (2024). <i>Fadpako ni navi bahar padeli ashaspad jato</i> , <i>Krusha Govidya</i> , 10 pp:09 (ISSN 2320-8902).
4.	Dudhat B. L. (2023). “ <i>Krusha Bajar Vyavashtha: Samashya ane Samadhan</i> ” <i>Pak sanrakshan ane bajar vyavashthapan: Samashya ane Samadhan</i> pp: 206-210.

13. Books / Book chapters published (2023-2024):

i. Books/ Booklets:

Sr. No.	Name of Book	Name of Authors	Name of Publisher
1.	Modern Plant Breeding	Dr. Gita R. Chaudhari Dr. Krishna Prakash Ms. Sheetal R. Patel	Brillion Publishing, New Delhi ISBN: 978-81-19238-83-5 e-ISBN: 978-81-19238-76-7
2.	Core of Horticulture	Dr. Gita R. Chaudhari Patel Kena S. Priyanka Goswami	Elite Publishing House, New Delhi ISBN : 978-93-58992-19-9
3.	A textbook of Statistical Computing	Ghetiya Radhika Lalitkumar Vekariya Prashantbhai Rameshkumar Prity Kumari	International Journal of Microbial Science
4.	Textbook on Linear Models at a Glance	Vekariya Prashantbhai Rameshkumar Ghetiya Radhika Lalitkumar Prity Kumari	

ii. Book chapter:

Sr. No.	Name of Book	Book Chapter	Name of Authors	Name of Publisher
1	<i>Kamalam (Dragon fruit) Gujarat ma navo fal pak</i>	<i>Dragon fruit (Kamalam) no parichay tatha paristhiti ane tako</i>	Dr.N.I.Shah and Dr.B.H.Panchal	Director of Extension Education, Anand Agricultural University, Anand. EXT-3:20:2023:3000, ISBN: 978-93-5906-055-2.PP:33-39
2		<i>Dragon fruit (Kamalam) ni vividh banavato</i>	Dr.R.R.Gajera	Director of Extension Education, Anand Agricultural University, Anand. EXT-3:20:2023:3000, ISBN: 978-93-5906-055-2. PP: 40-45.
3		<i>Dragon fruit (Kamalam) ma rahela poshak tatvo ane temathi thata arogyaprad faydao.</i>	Dr.R.R.Gajera	

4	<i>Kamalam (Dragon fruit) Gujarat ma navo phalpak</i>	<i>Kamlam (Dragon fruit) Gujarat ma navo phalpak</i>	Paradva D. R and Satodiya B. N	Director of Extension Education, Anand Agricultural University, Anand. EXT- 3:20:2023:3000, ISBN: 978-93-5906- 055-2 PP: 03-23.
5	<i>Kamalam (Dragon fruit) Gujarat ma navo fal pak</i>	<i>“Dragon Fruit (Kamalam) nu marketing antardeshiya ane antarrashtriya”</i>	Dudhat B. L.	Director of Extension Education, Anand Agricultural University, Anand. EXT- 3:20:2023:3000, ISBN: 978-93-5906- 055-2 PP:51-55.
5	Modern Plant Breeding	Recent Advances in High Throughput Phenotyping for Crop Improvement	Gita R. Chaudhari, Neelam Shekhvat, Divya Chavda, Sridhar Ragi, Sushil Kumar	Brillion Publishing, New Delhi ISBN: 978-81- 19238-83-5 e-ISBN: 978-81- 19238-76-7
6		Allele Mining Approach In Cereal Crops	Neelam Shekhawat, Gita Chaudhari, Ramesh	
7	Research advances and challenges in agricultural science	Effect of various seed priming methods on maize fodder yield	Harsh K. Patel, H.K.Patel, P.H.Rathod. C.H.Raval and D.H.Dudhat	Research advances and challenges in agricultural science Vol. 6 Chapte 5, ISBN: 978-81- 972413-4-5

APPENDIX-1

Seminar / Symposia / Conference / Training organized 2023-24:

Name of events	Duration	Organize/Sponsored agency
NIL		

University teachers who have participated in Seminar/Symposia/Conference Training during the year 2023-24:

7

College of Horticulture
Anand Agricultural University, Anand

20TH ANNUAL REPORT OF THE YEAR 2023-24

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	02
2	Total number of international seminar attended by total faculty in the year	02
3	Total number of workshop & conferences attended by total faculty in the year	04
4	Total number of research papers presented by faculty at conferences in India & abroad during the year	07
5	Number of research contribution to Scopus till date by permanent faculty	06
6	Number of research contribution to Scopus by permanent faculty	03
7	Total number of <u>research publications</u> of <u>existing permanent faculty</u> in <u>national journals</u>	18

Details of Research Publications (National):

Name of Faculty Member	Name of the Research Paper	Year of Publication	Name of the Journal
Shah, N. I., Parmar, A. B., Chaudhari, U. C.	"Influence of media and nutrient on flowering and flower yield of pot grown Kashmiri rose."	2023	The Pharma Innovation Journal
Paradva D.R.	Impact of post-shooting sprays and protective covers on fruit quality attributes banana (<i>Musa paradisiaca</i> L.) cv. grand naine.	2023	The Pharma Innovation Journal
Chaudhari, U. C., Maheriya, P. A., and Shah, N. I.	"Evaluation of different chrysanthemum genotypes for growth and yield parameters under middle Gujarat Agro-climatic Zone."	2023	The Pharma Innovation Journal
Maheriya, P. A., Satodiya, B. N., Chaudhari, U. C.	"Comparative study of growing condition and integrated nutrient management on growth and yield of broccoli cv. Pusa KTS-1."	2023	The Pharma Innovation Journal

Chaudhari Gita R.	Secondary metabolites production in plant tissue culture	2023	The Pharma Innovation Journal
	Rice root riposte to drought stress: Morphological and molecular apparatus		
Barad A. H.	Economically management of thrips by insecticides in chili under field condition	2023	The Pharma Innovation Journal
	Trichogramma: a promising biocontrol agent	2023	International Journal of Economic Plants
	Host susceptibility of tobacco leaf eating caterpillar (<i>Spodoptera litura</i> F.) under laboratory condition	2023	International Journal of Bio-resource and Stress Management
Barad A. H., Prajapati H.N.	First report of seed weevil, <i>Curculio c-album</i> Fabricius infesting on jamun, <i>Syzygium cuminii</i> (L.)	2023	Emergent Life Sciences Research
	Impact of Weather Parameters on Population Dynamics of Tobacco Leaf Eating Caterpillar, <i>Spodoptera litura</i> (F.) Infesting Groundnut	2023	Environment and Ecology
	Effect of hot water treatment on papaya fruit peel infected with fruit rot (<i>Colletotrichum domatium</i>)	2023	The Pharma Innovation Journal
	Isolation, pathogenicity and identification of <i>Xanthomonas citri</i> pv. <i>citri</i> causing citrus canker disease in Gujarat	2023	The Pharma Innovation Journal
	In-vitro evaluation of different agrochemicals and medicinal plant extracts against <i>Xanthomonas citri</i> PV. <i>Citri</i> causing citrus canker.	2023	The Pharma Innovation Journal
	Evaluation of different	2023	The Pharma Innovation

	doses of insecticides against aphid, <i>Macrosiphoniella sanbornii</i> and coccinellids in chrysanthemum ecosystem,		Journal
Raval C. H.	Micronutrients enriched organic manure and biofertilizer as influenced on multi-cut fodder oat <i>Avena sativa</i> (L.),	2023	Life Science Research
Satodiya B.N.	Influence of varieties on foliar application of Zn and Fe for growth, yield and quality of okra.	2023	The Pharma Innovation Journal
8.	Total number of research publications of existing permanent faculty in international journals		10
Details of Research Publications (International):			
Name of Faculty Member	Name of Faculty Member	Year of Publication	Name of the Journal
Shah N.I.	Optimizing phalsa cv. Local growth, flowering, and yield parameters through round-the-year pruning and fertilizer management	2023	Journal of Applied Horticulture
	Effect of Organic Sources on Soil and Leaf Nutrient Status of Sapota [<i>Manilkara achras</i> (Mill.) Fosberg] cv. Kalipatti.	2024	International Journal of Plant & Soil Science
Paradva D.R.	Effects of post-shooting sprays and bunch covering on yield attributes of Willium banana (<i>Musa paradisiaca</i> L.)	2023	International Journal of Agricultural Sciences,
Kumari Prity	Recurrent neural network architecture for forecasting banana prices in Gujarat, India.	2023	PLoS ONE,
	Memory based neural network for cumin price forecasting in Gujarat, India	2023	Journal of Agriculture and Food Research.
	Potato and potato seed	2023	Potato Research

	production under contract farming- A study from empirical evidence of case studies,		
Dudhat B. L.	“Comparing Cost Of Cultivation and Scale of Finance of Major Crops in Anand & Vadodara District of Gujarat”	2023	International Journal of Agriculture Sciences
Raval C. H. and Parekh D.D.	Influence of Organics Nutrient Management on Growth and Yield Attribute of Onion (<i>Allium cepa</i> L.),	2023	Biological Forum – An International Journal
Raval C.H.	Effect of Organic Sources of Nutrients on Yield, Quality, Soil Fertility Status and Economics of Onion (<i>Allium cepa</i> L.),	2024	International Journal of Plant & Soil Science
Satodiya B.N.	Response of Varieties to Foliar Application of Zn and Fe for Yield and Quality Parameters of Okra.		Biological Forum – An International Journal
9.	Total number of books/book chapter published by existing permanent faculty in the year		04
1.	Modern Plant Breeding	Dr. Gita R. Chaudhari Dr. Krishna Prakash Ms. Sheetal R. Patel	
2.	Core of Horticulture	Dr. Gita R. Chaudhari Patel Kena S. Priyanka Goswami	
3.	A textbook of Statistical Computing	Ghetiya Radhika Lalitkumar Vekariya Prashantbhai Rameshkumar Prity Kumari	
4.	Textbook on Linear models at a Glance	Vekariya Prashantbhai Rameshkumar Ghetiya Radhika Lalitkumar Prity Kumari	

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	01
2	Total value of consultancy projects (Rs. Lakhs)	4.00
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	

3.1 Post Graduate:

List of faculties act as a major guide and number of students under his/her guidance:

Sr. No	Name of major guide	Students (Completed)		Total (Completed)	Students (Continues..)		Total (Continues..)
		Ph.D.	M.Sc.		Ph.D.	M.Sc.	
1.	Dr.N.I.Shah	08	10	18	02	03	05
2.	Dr.B. N. Satodiya	02	10	12	03	01	04
3.	Dr. R. R. Gajera	-	05	05	-	00	00
4.	Dr. D. D. Parekh	-	08	08	01	02	03
5.	Dr.A.H.Barad	-	04	04	-	01	01
6.	Dr.B.L.Dudhat	-	01	01	-	02	02
8.	Dr.C.H.Raval	-	01	01	-	03	03
9.	Dr.H.N.Prajapati	-	02	02	-	04	04
10.	Dr.Amita Parmar	-	-	-	-	02	02
11.	Dr.Prity Kumari	00	01	01	00	02	02
12.	Dr.D.R.Paradva	-	-	-	-	01	01
Total		10	42	52	06	21	27

List of faculties engaged in PG teaching:

Sr. No.	Name of Major guide	No. of course in M.Sc	Credit hours	No. of course in Ph.D	Credit hours
1.	Dr.N.I.Shah	02	07	02	08
2.	Dr. B. N. Satodiya	-	-	02	06
3.	Dr. R. R. Gajera	01	04	-	04
4.	Dr. D. D. Parekh	01	04	-	-
5.	Dr.A.H.Barad	01	03	-	-
6.	Dr.B.L.Dudhat	02	05	-	-
8.	Dr.C.H.Raval	-	-	01	04
9.	Dr.H.N.Prajapati	01	04	01	04
10.	Dr.PrityKumari	01	04	01	03
11.	Dr.Amita Parmar	02	08	-	-
12.	Dr.D.R.Paradva	01	04	-	-
Total		12	43	07	29