

Courses offered/covered at U.G. level

Course Number	Title of Course	Credits
BSH 1.4	Principles of Plant Physiology	1 + 1
BSH 1.8	Introductory Botany (Forestry) (Common course)	2 + 1
BSH 4.2	Tree Physiology	2 + 1
FWE 7.1.3	Forestry Work Experience (Nursery management – MAP)	0 + 1
FBT 4.1	Dendrology	2 + 1
BSC 1.3	Introductory Crop Physiology	1 + 1
BSC 1.7	Introductory Botany (Horticulture) (Common course)	2 + 1
BSC 2.2	Growth and Development of Horticultural Crops	1 + 1
BSH 3.10	Principles of cytology an genetics	2+1
BOT 4.2	Introductory Crop Physiology (UG Polytechnique)	2 + 1
BOT 4.3	Genetics and Plant Breeding (UG Polytechnique)	1 + 1
BSC 5.13	Plant Biochemistry and biotechnology	2+1
BOT 5.4	Elementary Plant Biotechnology (UG Polytechnique)	2 + 1

Courses offered/covered at P.G. level

Course Number	Title of Course	Credits
MAP 522	Medicinal chemistry and processing of MAP's	2 + 1
MAP 525	Role of medicinal & aromatic plants in Health Care	2 + 0
MAP 527	Pharmacognosy of Medicinal and Aromatic Plants	1 + 1
PSMA 508	Underexploited Medicinal and Aromatic Plants	1 + 1
VSC 504	Growth & Development of Vegetable Crops	2 + 1
VSC 606	Abiotic Stress management in Vegetable Crops	2 + 1
FSC 508	Growth & Development of Horticultural Crops	2 + 1
FSC 605	Biotic & Abiotic stress management in Horticultural Crops	2 + 1

Facilities Available:

- i) Compound and binocular microscopes, Physiological apparatus for demonstration of transpiration, respiration, photosynthesis viz – types of potometer, respirometer, clinostat (vertical and horizontal for demonstration of growth), leaf area meter, dendrometer and photosynthetic apparatus.
- ii) Permanent slides of plant tissues, cell divisions and charts for morphological studies of root, stem and leaves
- iii) 4 ha Model Nursery on Medicinal and Aromatic Plants for identification, multiplication and collection of medicinal and aromatic germplasm
- iv) Biodiversity Conservation Centre for students and researchers – collection of unique flora of Gujarat and India.
- v) Collection of over 200 dried herbarium specimens

Research Activity:

A. Completed Project

No.	Title of Project	Name of PI	Funding Agency
1	Reproductive Biology and Phenological studies of Tropical Tree species – <i>Sterculia urens</i> , <i>Tectona Grandis</i> & <i>Terminalia arjuna</i>	Dr Bimal S Desai	Gujarat Council On Science & Technology (GUJCOST) Gandhinagar
2.	Forest Resource Survey of Rajpipla Forest Division	Dr Bimal S Desai	Gujarat Forest Research Institute (GFRI), Gandhinagar
3.	Induced resistance in <i>Eucalyptus</i> seedling against Gall insect	Prof. Kirti Vardhan	Departmental Research
4.	<i>In vitro</i> regeneration of <i>Eucalyptus</i> (<i>Eucalyptus tereticornis</i>)	Prof. Vipul Parekh	Departmental Research
5.	<i>In vitro</i> growth of callus from normal & gall infected <i>Eucalyptus</i> tissue	Prof. Kirti Vardhan	Departmental Research

Publication Complete list:

A) Paper published by Dr. Bimal S. Desai, Asst. Prof. (Botany)

Research Paper published in Journals

1. Pilo B, Desai B. S., Manoj E and Dave M. (2005). "Conservation Status of *Citrullus colocynthis* in Gujarat". *Ecology, Environment and Conservation*. **8**(1): pp. 105-110.
2. Jasrai, Y. T., Wala, B and B. S. Desai. (1999). "Computer Based Complementary Technique for Plant Herbaria". *Current Science*. Vol. 75. Page 695

Review Articles Published in Edited Books

1. Jasrai, Y. T and B. S. Desai. (2002). "Herbal Resources available for commonest disease – Diabetes". In: Role of Biotechnology in Medicinal Plants – VIII. Ukaaz Publications. Hyderabad. Edited by Irfan Ali Khan & Atiya Khanum.
2. Desai, B. S., Pradeepkumar, G and G. Prathapasenan (2003). "Biodiversity of Gujarat with Special Reference to Protected Areas-Problems and Perspectives". In: Protected Habitats and Biodiversity. Published by NATCON, Muzzarfarnagar

3. **Desai, B. S.**, Desai, R. B. and Y. T. Jasrai (2005). "Herbal Therapy for Rheumatoid Arthritis". In: Herbal Medicines for Human Diseases. Vol. 2. Ukaaz Publications. Hyderabad. 2005. Edited by Irfan Ali Khan & Atiya Khanum

Books/Booklets Published

1. Jasrai, Y. T., PradeepKumar, G. and **B. S. Desai**. (2001). "Medicinal Plants – I". Published by University Press. M. S. University of Baroda. Vadodara (Book)
2. Jasrai, Y. T., Sisodia, P and **B. S. Desai**. (2005). "Plants – Importance, Diversity and Conservation". Published by Botanical Garden and B. Sc. Environmental Science Programme. M. S. University of Baroda, Vadodara (Booklet)
3. **Desai, B. S.**, Jasrai, Y. T., Parabia, F. M and M. H. Parabia (2008). "Medicinal Plants and Glossary of Selected Terms". Published by Bharatiya Kala Prakashan. Delhi. (Book)

Abstracts Published in Souvenirs of Seminars/Conference – Total 27

Popular Articles/Gujarati Articles – Total 10

(B) Paper published by Prof. Kirti Vardhan, Asst. Prof. (Crop Physiology)

In Research Journals

1. Thakre H.S., **Kirti Bardhan** and Kumar V. (2011) : Effect of square removal on growth, yield and fiber quality of transgenic Bt Cotton hybrids: *Indian Journal of Plant Physiology*: Vol. 16 No. 2(N.S.) pp 200-204
2. M.K.Yadav, Patel N.L., Patel S.R. and **Kirti Bardhan** (2009): Response of banana (*Musa paradisiacal L.*) cv. Grand Nine to micronutrient: *Annals of Plant Physiology*: vol.23, No.1 pp 71-73
3. **Kirti Bardhan**, Kumar V., and Dhimmara S.K. (2007): An evaluation of the potentiality of exogenous osmoprotectants mitigating water stress on chickpea: *The journal of Agricultural Sciences*. Vol. 3, No.-2 pp 67-74.
Published by : Sabaragamuwa University of Srilanka.
4. M.K.Yadav, Singh P.S, Patel N.L. and **Kirti Bardhan** (2006):Response of GA₃, Ca(NO₃), bavistin and neem extract on the storage life of Nagpur mandarin (*Citrus reticulate Blanco*): *Indian Journal of Arid Horticulture*: Vol.1, No.1 pp-80-82

Papers Presented in Seminars/Symposiums

5. V. Kumar and **Kirti Bardhan** (2009): Screening of cotton genotypes for moisture stress using drought stress indices: National Conference on frontiers in Plant Physiology towards Sustainable Agriculture. 5-7 Nov., 2009 held at AAU, Jorhat, Assam.pp-42
6. H.S. Thakre, V.Kumar and **Kirti Bardhan** (2009): Effect of square removal on cotton growth, yield and fiber quality: National Conference on frontiers in Plant Physiology towards Sustainable Agriculture. 5-7 Nov., 2009 held at AAU, Jorhat, Assam.pp-109
7. **Kirti Bardhan**, V.Kumar, Tashlim Ahmed, Patel D.H. and Shah R.R. (2008): Establishment of tissue cultures of elite parental lines of cotton: Golden Jubilee Conference on "Challenges and Emerging Strategies for Improving Plant Productivity". 12-14 Nov.2008 held at IARI, New Delhi pp.206

8. V.Kumar and **Kirti Bardhan** (2008): Physiological variation in Bt cotton hybrids. Golden Jubilee Conference on "Challenges and Emerging Strategies for Improving Plant Productivity". 12-14 Nov. 2008 held at IARI, New Delhi pp.170
9. **Kirti Bardhan** and V.Kumar (2007): An evaluation of the potentiality of exogenous osmoprotectants mitigating water stress on chickpea: International Conference on Sustainable Agriculture for Food, Bio-energy and Livelihood Security. 14-16 Feb. 2007 held at J.N.K.V.V. Jabalpur, M.P.
10. **Kirti Bardhan**, Kumar V. and Vashi P.S. (2005): Evaluation of the potentiality of exogenous osmoprotectants on the growth and yield of chickpea under unirrigated condition. National Seminar on Plant Physiology (Crop productivity and quality improvement through physiological interventions). 23-25 Nov, 2005 held at NAU, Navsari (Guj.) pp-13
11. **Kirti Bardhan** and Kumar V. (2005): Alleviation of water stress by foliar application of osmoprotectants in chickpea. National Seminar on Plant Physiology (Crop productivity and quality improvement through physiological interventions). 23-25 Nov, 2005 held at NAU, Navsari (Guj.) pp-62

**(C) Paper published by Prof. Vipul B. Parekh, Asst. Prof. (Biotechnology)
In Research Journals**

1. Patel, C. S.; Jani, J. J., **Parekh, V. B.**, Darji, V. B. and Vaishnav, P. R. (2009). Genetic diversity and differentiation of *Helicoverpa armigera* nuclear polyhedrosis virus isolates from India. *Phytoparasitica*, 37: 407–413.
2. Patel, C. S.; Jani, J. J., **Parekh, V. B.**, Darji, V. B. and Vaishnav, P. R. (2009). Geographic variations and their impact on bioefficacy amongst *Helicoverpa armigera* Nuclear polyhedrosis Virus isolates from India. *World J. Microbiol. Biotechnol.*, DOI 10.1007/s11274-009-0234-9 (Volume 26, Number 5, Pages 783-794)

Books/Monographs

1. **Vipul Parekh, Jadeja G.C., Subhash N.** (2011) Molecular Marker Polymorphism and Hybrid Performance: A study on Pearl millet [*Pennisetum glaucum* (L.) R Br. emend. stuntz] for yield and drought resistance traits. LAP LAMBERT Academic Publishing GmbH & Co. KG. Germany. ISBN No. 978-3-8473-1618-3.

Papers Presented In Seminar/Symposiums

2. Oral paper presentation entitled "Genetic diversity Diversity analysis of CMS and Restorer lines of Pear millet (*Pennisetum glaucum*(L.) Br. emend. stuntz) using RAPD and Microsatellite Markers" at the National Conference on "Frontiers in Biological Sciences", S. P. University, Vallabh Vidyanagar, Gujarat, India. (Won 2nd prize)
3. "Genomic Characterization of geographic isolates of Nuclear Polyhedrosis Virus against *Helicoverpa armigera* (Hubner) (Lepidoptera: Noctuidae)." C.S. Patel, V.B. Parekh and J. J. Jani National Seminar on Emerging areas in Plant Sciences, sponsored by CSIR, New Delhi, Department of Botany, M. S. University, Vadodara

4. "Forest Biotechnology: Present status and future perspectives." National Seminar on Agroforestry: An evergreen agriculture for food security and environmental resilience. 2-4th February, 2012 organized by Aspee College of Horticulture and Forestry, Horticultural society of Gujarat, Gujarat Association of Agricultural Sciences, Navsari.

9. Extension work:

- A. Plant identification to farmers, students and researchers
- B. Guidance to schools and colleges for science related projects
- C. Training to farmers for propagation methods of medicinal and aromatic plants
- D. Krushi Mela and Krushi Rath duties

10) Future Plan:

- To develop a well equipped laboratory of Botany and Plant Physiology
- To develop informative database of Biodiversity of Gujarat with special emphasis on medicinal and aromatic plants.
- To explore floristically under exploited and underutilized plant species.
- Strengthening of Medicinal and Aromatic Plant Nursery.
- Priority based innovative research on packaging practices of medicinal & aromatic Plants
- Strengthening of Herbarium specimens of forest species.

11). Major Achievements:

- 02 students got Scholarship and minor project of Rs. 25000 from Gujarat Council on Science and Technology, Gandhinagar under Student Sci-Tech Programme.
- 02 students completed M. Sc. and 03 students are pursuing their Masters in Medicinal and Aromatic Plants.
- **PROF. KIRTI VARDHAN** is the recipient of the following awards and honors:
- Recipient of **Best Poster Presentation Award** from Indian Society for Plant Physiology for poster presentation during National Seminar based on M.Sc. Research.
- Selected for **University P.G. Fellowship** from Agricultural Faculty for Ph.D. Studies by Navsari Agricultural University, Navsari (Gujarat)
- Recipient of **Second Prize during Inter-college paper presentation competition** of Navsari Agricultural University, Navsari (Gujarat)