

# Report of Botany Department (session 2016-17)



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Sector-36, Chandigarh

[www.mcmdavcwchd.edu.in](http://www.mcmdavcwchd.edu.in)

**Department name: Botany**

**Session: 2016-17**

Names of Programmes/Courses/offered:

- B.Sc. Medical Three Year Undergraduate Course

Faculty Publications/Awards/Achievements/Activities:

**1. Faculty Activity 1**

**Workshop/Seminar/Conference attended:**

**1. Dr. Purnima Bhandari**

- Awarded Ph.D Degree
- **Bhandari, P.** and Garg, N. 2016. Differential response of silicon and/or mycorrhization in modulating proline metabolism and soluble sugar accrual in salt-stressed chickpea plants. *In*: National conference of plant physiology-2016, Challenges in Crop physiology research: From molecular to whole plant; organized by Department of Crop physiology, University of Agricultural Sciences, Bengaluru and Indian Society for Plant Physiology, New Delhi. DECEMBER 8<sup>th</sup>- 10<sup>th</sup>, 2016. **Poster presentation**

**ii. Faculty activity 2**

**Bhandari, P.** and Garg, N. 2016. Modulatory responses of silicon nutrition and/or *Funneliformis mosseae* in improving growth and nutrient status in salt stressed *Cicer arietinum* L. genotypes. *In*: CHASCON 2016; organized by Panjab University; FEBRUARY 29<sup>th</sup>-march 2<sup>nd</sup> 2016. **Poster presentation.**

iii. **Faculty activity 3**

**Bhandari, P.** and Garg, N. 2016. Differential response of silicon fertilization and/or mycorrhization in modulating ascorbate-glutathione cycle and antioxidant scavenging capacity *Cicer arietinum* L. genotypes subjected to long term salinity. *In*: National Conference on Plant Science Research: Looking beyond 21<sup>st</sup> century for environmental and agricultural revolution. Organized by Society for Plant Research (VEGETOS) and department of Botany, University of Delhi, New Delhi, INDIA. January 5<sup>th</sup>-7<sup>th</sup>, 2016. **Oral presentation.**

iv. **Faculty activity 3**

**2. Dr. Geetika Singh**

- Awarded Ph.D Degree

v. **Faculty activity 4**

**3 Dr. GunjanSud**

- Was one of the **Organizing member** of the two days **National Seminar** entitled “**Animal Diseases- Impact on Human Health**”, organized by the **departments of Zoology and Microbial food Technology**, MCM College for Women sector 36-A on **30-31<sup>st</sup> August, 2016.**

i. **Guest lectures**

- A lecture on Essential Oils and their Uses was organized by Ms. SupreetChatha in collaboration with the department of Cosmetology on 14 and 15 January 2016 in the department which was attended by the students of B. Sc (Medical) I,II and III. The importance of various

essential oils like Calendula, Jasmine, Rose, Lavender, Eucalyptus, Tulsi was highlighted for skin, hair and body care.

### **WORKSHOPS (2016-17)**

- 1. Visits to P. N. Mehra Botanical Garden, P. U., Chandigarh** were organized for the students of B. Sc. II (Section A and B) on 15<sup>th</sup> and 16<sup>th</sup> September, 2016 and for B. Sc. III on 7<sup>th</sup> October, 2016 to study the local flora in its natural habitat. The students also visited Plant Tissue Culture lab of Botany department, P. U., Chandigarh and learnt the ways and techniques of Plant Tissue Culture and interacted with the faculty.
- 2. A meeting of the advisory committee members from DBT, New Delhi** was held in the college on 21.01.2017 in which Dr. SumanGovil and Dr. Prince Sharma visited the college and the department gave its presentation regarding the various activities and projects held by it under the star college status. An interactive session with members from DBT under Star College Scheme was also held.
- 3. An interactive session** was held in the college in which the faculty from all science departments interacted with **Prof. Sunita and her team of research scholars from Ruia College, Mumbai** and discussed various activities and projects being taken up by the undergraduate students of both the colleges (both being star colleges). Prof. Sunita also visited the college Botanical Garden and Rishi Vatika
- 4. A lecture on Laboratory safety practices** by Dr. AR Choudhury, IISER, Mohali was organized on the occasion of Science Day – 28<sup>th</sup> February 2017. It was attended by the all the science faculty and around 95 science students of various departments. Besides, members of non-teaching staff (lab attendants) also attended the same where they gained knowledge about lab safety during the experimentation process.

## **Publications (2016-17)**

### **1. Dr. Purnima Bhandari**

Garg, N., **Bhandari, P.**, Kashyap, L. and Singh, S. 2017. Arbuscularmycorrhizal symbiosis: A boon for sustainable legume production under salinity and heavy metal stresses. In: MYCORRHIZAL FUNGI, (eds.) Aggarwal, A. and Yadav, K., Astral International Pvt., Ltd, New Delhi, pp. 247-273.

Garg, N. and **Bhandari, P.** 2016. Silicon nutrition and mycorrhizal inoculations improve growth, nutrient status,  $K^+/Na^+$  ratio and yield of *Cicer arietinum* L. genotypes under salinity stress. *Plant Growth Regul.* 78: 371–387. **(I.F.: 2.33)**

Garg, N. and **Bhandari, P.** 2016. Interactive effects of silicon and arbuscular mycorrhiza in modulating ascorbate-glutathione cycle and antioxidant scavenging capacity in differentially salt-tolerant *Cicer arietinum* L. genotypes subjected to long-term salinity. *Protoplasma.* **253**:1325-1345 **(I.F.: 2.34)**

### **2. Dr. Geetika Singh**

**Geetika Singh**, Richa, M.L. Sharma. 2016. Effect of ageing on endogenous auxins, Gibberlins and abscisic acid in the three species of bamboo seeds in relation to loss of viability during storage. *Biolife.* 4(2): 370-375.

**Geetika Singh**, Richa and M.L.Sharma. 2016. Effect of prolonged storage on the biochemical constituents of primary metabolites in three species of bamboo seeds. *International journal of pharmaceutical sciences review and research.* 39(1): 248-250.

## 2. Dr. GunjanSud

*Pilosellaechioides* (Lumitzer) F.W. Schultz & Schultz Bipontinus (Asteraceae)-A lesser known taxon from Himachal. *Indian Forester*. 142(7):708, 2016.

Research note viz. ***Zinnia peruviana* L. (Asteraceae) – an overlooked species from Himachal Pradesh** has been accepted for publication in the peer reviewed journal *Indian Forester*.

Research paper entitled ***Prenanthesaitchisoniana*(Beauv.) RoohiBano&Qaiser (Asteraceae) - First record from India** has been sent for publication to the peer reviewed international online journal *Check List the journal of biodiversity taxa*.

Research paper entitled **Additions to the Asteraceae of Una District, Himachal Pradesh** has been submitted for publication to *J. Econ. Taxon. Bot*.

## ii. Books Published/Revised

### Mrs. Neelam Dhand (2016-17):

1. *Plant Ecology and Taxonomy*, 2<sup>nd</sup> Semester, B. Sc. I, H P University with Lab Manual ISSN 81-87223-75-8, New Edition, **2017**. Trueman Publications, Jalandhar, Mrs. NeelamDhand.
2. *Foundations of Botany, B. Sc. I, 1<sup>st</sup> Semester(Major). Phycology, Mycology, Plant Pathology, Bryophyta, Pteridophyta* under CBCS, ISSN 81-87223-33-2, 1<sup>st</sup> Edition 2005, New Edition **2017**. Trueman Publications, Jalandhar, Mrs. NeelamDhand.
3. *Plant Pathology* for Core Elective 6th Semester of HP University, New Edition **2016**, Trueman Publications, Jalandhar, Mrs. NeelamDhand  
ISBN 81-87223-31-6
4. *Bioinformatics* for Core Elective 6<sup>th</sup> Semester of HP University, New Edition **2016**, Trueman Publications, Jalandhar, Mrs. NeelamDhand  
ISBN 81-87223-41-3

5. *Cytogenetics, Evolutionary and Cell Biology* for Zoology 4<sup>th</sup> semester of B.Sc. II of HP University New Edition **2016**, Trueman Publications, Jalandhar, KN Bhatia & Mrs. NeelamDhand  
ISBN 81-87223-72-3
6. *Biochemistry, Biotechnology and Molecular Biology* for 5<sup>th</sup> semester (Major) B.Sc. III of HP University New Edition **2016**, Trueman Publications, Jalandhar, KN Bhatia & Mrs. NeelamDhand  
ISBN 81-87223-70-7
7. *Biochemistry, Biotechnology and Molecular Biology* for Zoology 5<sup>th</sup> semester (Major) B.Sc. III of HP University New Edition **2016**, Trueman Publications, Jalandhar, KN Bhatia & Mrs. NeelamDhand  
ISBN 81-87223-71-5
8. *Genetics Paper – B* for 2<sup>nd</sup> Semester of B.Sc. I of Panjab University New Edition **2015, 2016** Trueman Publications, Jalandhar, KN Bhatia & Mrs. NeelamDhand  
ISBN 81-87223-51-0

iii. **Positions held (2016-17)**

- **Mrs. NeelamDhand**
  - Member of MCM Advisory Committee
  - Dean Sciences
  - Dean, Add on Courses
  - Department Coordinator Star Colleges Team
  - In-charge of practical examinations
- **Dr. Purnima Bhandari**
  - Coordinator MIS of Botany Department
  - Member of Horticulture Committee
  - In-charge Botanical Garden

- **Dr. GunjanSud**
  - In-charge Rishi Vatika
- **Dr. Geetika Singh**
  - Member MIS of Botany Department
  - In-charge of Botanical Garden

**Students Publications/Awards/Achievements/Activities:**

**StudentActivity1**

**List of New Practical/demonstrations introduced for UG students in year 2016-17:-**

Year	Project on	No. of Students
2016-17	Seed germination (viability Test)	25
	Determination of soil pH of different areas including campus and surrounding areas	16
	Study of different genera of Algae	12
	Study of different genera of Fungi	26
	Study of different genera of Bryophytes	10
	Study of different genera of Pteridophytes	44
	Study of different types of inflorescence in angiosperms	36
	Study of different type of seed and fruit dispersal mechanisms	37
	Comparative studies of pollen grains among various genera	20
	Study of Different types of fruits of angiosperms	20
	Comparative studies related to chlorophyll concentrations among various genera	15
	Comparative studies related to relative water content (RWC) among various genera	15



## **Student Activity 2.**

### **1. Number of students taking project–**

Total number of students (2016-17) – 276

### **2. Interdepartmental activities conducted 2016-17**

- Maintenance of Vermiculture and Vermicomposting units to convert kitchen and garden waste into organic manure.
- Maintenance of a bio-diversity pond for the study of flora and fauna.
- A nature walk (comprised of a series of visits to Botanical Garden and Rishi Vatika) was organized for the students of B. Sc. I, II and III.

### **Qualitative improvements due to DBT support (pl. highlight 5 salient lines) 2016-17**

- Availability of more material for practical pertaining to syllabus
- Emphasis is given on small new research projects
- Workshop held on **Laboratory safety practices** by Dr. AR Choudhury, IISER, Mohali on the occasion of Science Day – 28<sup>th</sup> February 2017 for students as well as science faculty, particularly lab staff as per advice by DBT Committee.