




## Faculty Details proforma for DU Web-site

Title	Dr.	First Name	C. S.	Last Name	Seth	Photograph
Designation		Assistant Professor				
Address		Dr. C.S. Seth Assistant Professor Room No. 25, Lab No.102 Department of Botany University of Delhi Delhi-110007				
Phone No Office		011-27667573				
Residence		Flat No. B-6; Teachers Residential Block, University of Delhi, Dhaka Land, Mukherjee Nagar, Delhi-110009				
Mobile		9810841604				
Email		seth_bhu@yahoo.co.in				
Web-Page		www.du.ac.in				
<b>Educational Qualifications:</b>						
Degree		Institution			Year	
Ph.D.		Department of Botany, University of Lucknow (U.P.)			2008	
PG		Department of Botany, Banaras Hindu University, Varanasi (U.P.)			2003	
UG		Banaras Hindu University, Varanasi (U.P.)			2001	
<b>Career Profile:</b>						

May 2008- September 2012	Senior Scientist CSIR-Institute of Himalayan Bioresource Technology Palampur-176061 (Himachal Pradesh)			
September 2012- August 2013 :	Assistant Professor Department of Botany Indira Gandhi National Tribal University Amarkantak-484886 (Madhya Pradesh)			
August 2013- Present:	Assistant Professor Department of Botany, University of Delhi Delhi-110007			
<b>Administrative Assignments:</b>				
<b>Areas of Interest / Specialization:</b>				
<ul style="list-style-type: none"> <li>• Phytohormones and Nitric Oxide assisted abiotic stress management in plants</li> <li>• Photosynthesis and Nitrogen metabolism under abiotic stress</li> <li>• Role of nanoparticles under abiotic stress in plants</li> <li>• Natural and synthetic chelate assisted phytoremediation of heavy metals</li> <li>• Oxidative stress and tolerance mechanism via antioxidants and phytochelatins</li> </ul>				
<b>Subjects Taught:</b>				
<ul style="list-style-type: none"> <li>• Courses taught at M.Sc. Level: <ul style="list-style-type: none"> <li>• BOT 103: Physiology and Biochemistry</li> <li>• BOT 301: Algae, Environment and Human Welfare</li> <li>• BOT 401: In Vitro Technologies and Industrial Applications</li> </ul> </li> <li>• Courses taught at M.Phil./Ph.D. level: <ul style="list-style-type: none"> <li>• EL 11: Photosynthetic responses to abiotic stresses in plants</li> </ul> </li> </ul>				
<b>Time table of the subjects taught during the current semester</b>				
<b>S. No.</b>	<b>Subject</b>	<b>Days</b>	<b>Time</b>	<b>Classroom</b>

1.	BOT 401: In Vitro Technologies and Industrial Applications	Monday (Theory and Practical)	Theory: 8:45-10:35 Practical: 10:35-4:05	Theory: # 208 Practical: # 45
2.	EL 11: Photosynthetic responses to abiotic stresses in plants	Friday (Theory and Practical)	Theory: 11:30-1:30 Practical: 2:30-5:30	Theory: Committee Room Practical: As per the location of the equipment

### Research Guidance:

List against each head (If applicable)

- |   |     |
|---|-----|
| 1. Supervision of awarded Doctoral Thesis:              | Nil |
| 2. Supervision of Doctoral Thesis, under progress:      | 03  |
| 3. Supervision of awarded M.Phil dissertations:         | 03  |
| 4. Supervision of M.Phil dissertations, under progress: | Nil |
| 5. Supervision of M.Sc. dissertation:                   | 03  |

### Publications Profile:

#### 1. Books/Monographs (Authored/Edited):

**C.S. Seth:** MECHANISMS OF CADMIUM PHYTOEXTRACTION IN INDIAN MUSTARD: 2011: LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany. ISBN: 978-3-8443-2384-9

#### 2. Research papers published in Refereed/Peer Reviewed Journals:

- P.K. Chaturvedi, **Chandra Shekhar Seth**, V. Misra. Sorption kinetics and leachability of heavy metal from the contaminated soil amended with immobilizing agent (humus soil and hydroxyapatite). Chemosphere **2006**; 64: 1109-1114.
- S. Mishra, S. Srivastava, R.D. Tripathi, R. Kumar, **Chandra Shekhar Seth**, D.K. Gupta. Lead detoxification by Coontail (*Ceratophyllum demersum* L.) involves induction of phytochelatins and antioxidant system in response to its accumulation. Chemosphere **2006**; 65: 1027-1039.
- **Chandra Shekhar Seth**, P.K. Chaturvedi, V. Misra. Toxic Effect of arsenate and cadmium alone and in combination on Giant Duckweed (*Spirodela polyrrhiza* L.) in response to its accumulation. Environmental Toxicology **2007**; 22: 539-549.
- P.K. Chaturvedi, **Chandra Shekhar Seth** and V. Misra. Selectivity sequences and sorption capacities of phosphatic clay and humus rich soil towards the heavy metals present in Zinc

mine tailing. *Journal of Hazardous Material* **2007**; 147: 698-705.

- **Chandra Shekhar Seth**, P.K. Chaturvedi, and V. Misra. The role of phytochelatins and antioxidants in tolerance to Cd accumulation in *Brassica juncea* L. *Ecotoxicology Environmental Safety* **2008**; 71: 76-85.
- **Chandra Shekhar Seth**, V. Misra, L.K.S. Chauhan, R.R. Singh. Genotoxic effects of cadmium on the root meristem cells of *Allium cepa*: A Cytogenetic and Comet assay approach. *Ecotoxicology Environmental Safety* **2008**; 71: 711-716.
- V. Misra, A. Tiwari, B. Shukla, and **Chandra Shekhar Seth**. Effects of Soil Amendments on the Bioavailability of Heavy Metals from Zinc Mine Tailings. *Environmental Monitoring Assessment* **2009**; 155: 467-475.
- **Chandra Shekhar Seth**, V. Misra, R.R. Singh and Lello Zolla. EDTA-enhanced lead phytoremediation in sunflower (*Helianthus annuus* L.) hydroponic culture. *Plant and Soil* **2011**; 347: 231-242
- **Chandra Shekhar Seth**, V. Misra, and L.K.S. Chauhan. Accumulation, Detoxification and Genotoxicity of Heavy Metals in Indian Mustard (*Brassica juncea* L.). *International Journal of Phytoremediation* **2012**; 14: 1-13.
- **Chandra Shekhar Seth**. A review on mechanisms of plant tolerance and role of transgenic plant in environmental clean-up. *Botanical Review*. **2012**; 78: 32-62.
- **Chandra Shekhar Seth**, T. Remans, E. Keunen, M. Jozefczak, H. Gielen, K. Opdenakker, N. Weyens, J. Vangronsveld and A. Cuypers. Phytoextraction of Toxic Metals: a Central Role for Glutathione. *Plant Cell and Environment* **2012**; 35: 334-346.
- **C.S. Seth**, V. Misra. Changes in C-N metabolism under elevated CO<sub>2</sub> and temperature in Indian mustard (*Brassica juncea* L.): An adaptation strategy under climate change scenario. *Journal of Plant Research* **2014**; 127: 793-802
- **Chandra Shekhar Seth**. A review on effects of climate change on plants and ecosystems and certain approaches for plant response studies under climate change scenario with specific focus on FACE. *Journal of Food and Nutritional Disorder* **2014**; 4(1): 1-9 ISSN: 2324-9323
- A. Agnihotri, **C.S. Seth**\*. Phytoremediation: A Better and Cleaner Way. *The Botanica* **2015**; 64 & 65: 156-163 ISSN: 0045-2629

- P. Gupta, **C.S. Seth\***. Nitric oxide donor Sodium Nitroprusside promotes seed germination and ameliorates adverse effects of salinity by enhancing the growth indices and photosynthetic traits in *Brassica juncea* L. cv. Varuna. *Phytomorphology* **2015**; 65 (3&4); 156-163: ISSN: 0031-9449
- Ashish Agnihotri, **Chandra Shekhar Seth\***. Exogenously applied nitrate improves the photosynthetic performance and Nitrogen metabolism in Tomato (*Solanum lycopersicum* L. cv Pusa Rohini) under Arsenic (V) toxicity. *Physiology and Molecular Biology of Plants* **2016**; 22(3): 341-349
- P. Gupta, S. Srivastava, **Chandra Shekhar Seth\***. 24-Epibrassinolide and Sodium Nitroprusside alleviate the salinity stress in *Brassica juncea* L. cv. Varuna through cross talk among proline, nitrogen metabolism and abscisic acid. *Plant and Soil* **2017**; 411(1): 483-498 DOI 10.1007/s11104-016-3043-6
- D. Singh, A. Agnihotri, **Chandra Shekhar Seth\***. Interactive effects of EDTA and Oxalic acid on chromium uptake, translocation and photosynthetic attributes in Indian mustard (*Brassica juncea* L. var. Varuna). *Current Science* **2017**; 112(10): 2034-2042
- Ashish Agnihotri, **C.S. Seth\***. Comet Assay: A Strong Tool for Evaluating DNA Damage and Comprehensive Guidelines for Plant Cells. *International Journal of Plant and Environment* **2017**; 3(2): 67-72 ISSN: 2454-1117
- Ashish Agnihotri, Praveen Gupta, Anuj Dwivedi, **Chandra Shekhar Seth\***. Counteractive mechanism (s) of salicylic acid in response to lead toxicity In *Brassica juncea* (L.) Czern. cv. Varuna. *Planta* **2018**; **248**: 49-68

#### Publication in the last one year

- P. Gupta, S. Srivastava, **Chandra Shekhar Seth\***. 24-Epibrassinolide and Sodium Nitroprusside alleviate the salinity stress in *Brassica juncea* L. cv. Varuna through cross talk among proline, nitrogen metabolism and abscisic acid. *Plant and Soil* **2017**; **411(1)**: **483-498** DOI **10.1007/s11104-016-3043-6**
- D. Singh, A. Agnihotri, **Chandra Shekhar Seth\***. Interactive effects of EDTA and Oxalic acid on chromium uptake, translocation and photosynthetic attributes in Indian mustard (*Brassica*

*juncea* L. var. Varuna). Current Science **2017; 112(10): 2034-2042**

- Ashish Agnihotri, Praveen Gupta, Anuj Dwivedi, **Chandra Shekhar Seth\***. Counteractive mechanism (s) of salicylic acid in response to lead toxicity In *Brassica juncea* (L.) Czern. cv. Varuna. Planta **2018; 248: 49-68**

#### Conference Organization/ Presentations (in the last three years):

- **Chandra Shekhar Seth.** Improvement of seed germination, growth indices and photosynthetic traits in *Brassica juncea* L. cv. Varuna by Nitric oxide donor sodium nitroprusside under salinity stress 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 and Department of Botany, University of Delhi-110007 on **February 5-7, 2016. (Oral)**
- Praveen Gupta, **Chandra Shekhar Seth.** Nitric oxide donor Sodium Nitroprusside improves the efficacy of 24-epibrassinolide in *Brassica juncea* (L.) cv. Varuna against salt stress in 6<sup>th</sup> International Conference on Technology Innovation and Management for Sustainable Development (TiMS-2016) organized by ITM University Gwalior (M.P.) on **February 11-13, 2016. (Oral)**
- Samta Gupta, **Chandra Sekhar Seth.** Salicylic acid alleviates chromium (VI) induced growth inhibition, photosynthetic attributes and lipid peroxidation in *Solanum lycopersicum* var. Pusa rosa. in International Conference on Emerging Trends in Biomedical Science (ETBS 2016) organized by Department of Biochemistry, Aligarh Muslim University-202002 on **March 6-8, 2016. (Oral)**
- Praveen Gupta, Sudhakar Srivastava, **Chandra Shekhar Seth.** 24-Epibrassinolide and Sodium Nitroprusside alleviate the salinity stress in *Brassica juncea* L. cv. Varuna through cross talk among proline, nitrogen metabolism and abscisic acid. *National Symposium on Biodiversity and Natural Resources for Sustainable Development (NBRSD-2017) organized by DEPARTMENT OF ZOOLOGY, CH CHARAN SINGH UNIVERSITY, MEERUT 250004 (U.P.) on November 24-26, 2017 (Oral)*

#### Research Projects (Major Grants/Research Collaboration):

- **2013-14:** Principal investigator for project entitled 'Study on role of phytochelatin and glutathione in tolerance to heavy metal accumulation in *Brassica juncea* L.' funded by University of Delhi-110007 (3.0 Lakh).
- **2014-15:** Principal investigator for project entitled 'Studies on chelate assisted Cr accumulation and detoxification by glutathione as a central molecule in Indian mustard' funded by University of

Delhi-110007 (2.8 Lakh).

- **2015-16:** Principal investigator for project entitled 'Studies on As (V) induced toxicity on carbon and nitrogen metabolism and its amelioration by exogenous nitrate in Tomato (*Solanum lycopersicum* L. cv PusaRohini)' funded by University of Delhi-110007 (3.0 Lakh).

#### Awards and Distinctions:

- Awarded for **Fellow of the Academy of Environmental Biology (FAEB)-2017**
- Awarded for **Fellow of Society For Plant Research (FSPR)-2015**
- Awarded for DST sponsored **BOYSCAST** Fellowship in 2011

#### Association With Professional Bodies

##### ✓ **Reviewing:**

- Reviewer of international journals: Plant Physiology and Biochemistry, Planta, Ecotoxicology and Environmental Safety

##### ✓ **Committees and Boards:**

- Member of the admission committee for Ph.D. in Department Of Botany
- Member of the Departmental Research Committee (DRC) from 2014 onwards\
- Acted as member of the local organizing committees for National Conference on Plant Science Research organized by Society for Plant Research during Feb 5-7, 2016
- Member of Reorganization of Teaching Labs
- Member of the Delhi University anti-ragging committee

##### ✓ **Memberships:**

- Life member of ISCA (The Indian Science Congress Association), Kolkata-700017
- Life member of ISEB (International Society of Environmental Botanist), CSIR-NBRI, Lucknow-226001 (U.P.)
- Life Member of AEB (The Academy of Environmental Biology), Lucknow-226020 (U.P.)
- Life Member of ISPM (International Society of Plant Morphologists), Department of Botany, University of Delhi, Delhi-110007
- Life Member of DUBS (Delhi University Botanical Society), Department of Botany, University of Delhi, Delhi-110007

#### Other Activities

- Participating in several day to day administrative and management activities in the organization
- 'observers' to observe the conduct of annual/semester examinations at various examination centers of the Delhi University