Faculty Details proforma for DU Web-site

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Title	Dr.	First Name	C. S.	Last Name	Seth	Photograph

Designation	Assistant Professor
Address	Room No. 25 Department of Botany University of Delhi, North Campus Delhi-110007
Phone No Office	011-27667573
Residence	
Mobile	9810841604
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Web-Page	

Educational Qualifications:

Degree	Institution	Year
Ph.D.	University of Lucknow (Ph.D. Botany)	2008
PG	Banaras Hindu University (M.Sc. Botany)	2003
UG	Banaras Hindu University (B.Sc.Hons.-Botany)	2001

Career Profile:

August 2013- Till date:	Assistant Professor Department of Botany, University of Delhi Delhi-110007
September 2012- August 2013:	Assistant Professor Department of Botany Indira Gandhi National Tribal University Amarkantak-484886 (Madhya Pradesh)

May 2008- September 2012	Scientist CSIR-Institute of Himalayan Bioresource Technology Palampur-176061 (Himachal Pradesh)

Administrative Assignments:

- Member of the admission committee for Ph.D. in Botany Department from March-2016-Feb-2018
- Two term member of the Departmental Research Committee from 2014-2017
- Member of the Delhi University anti-ragging committee from Jan-2015 onwards
- Member of Reorganization of Teaching Labs
- Acted as 'observers' to observe the conduct of annual/semester examinations at various examination centers of the Delhi University
- other day- to- day administrative and management activities in the Department

Areas of Interest / Specialization:

- Phytohormones and Nitric Oxide assisted abiotic stress management in plants
- Photosynthesis and Nitrogen metabolism under abiotic stress
- Nanotechnology under abiotic stress in plants
- Oxidative stress and tolerance mechanism via antioxidants and phytochelatins
- Phytoremediation of heavy metals

Subjects Taught:

- Courses taught at M.Sc. Level:

1. BOT 103: Physiology and Biochemistry
2. BOT 301: Algae, Environment and Human Welfare
3. BOT 401: In Vitro Technologies and Industrial Applications
4. BOT 408: Topics in Plant Physiology and Biochemistry

- Courses taught at M.Phil./Ph.D. level:

5. EL 11: Photosynthetic responses to abiotic stresses in plants

Time table of the subjects taught during the current semester				
S. No.	**Subject**	**Days**	**Time**	**Classroom**
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.	BOT 408: Topics in Plant Physiology and Biochemistry	Wednesday (Theory and Practical)	Theory: 8:45-10:35 Practical: 10:35-4:05	Theory: # 208 Practical: # 45
3.	BOT 409: Dissertation (4th semester)	Thursday Friday Saturday	Thursday 2:15PM-5:00PM Friday 2:15PM-5:00PM Saturday 2:15PM-5:00PM	Tutorial and Discussions: # 102
4.	EL 11: M.Phil and Ph.D. course work: 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:* *01*
5. *Supervision of M.Sc. dissertation:* *04*

Publications Profile:

1. ***Research papers published in Refereed/Peer Reviewed Journals:***

1. Praveen Gupta, **Chandra Shekhar Seth***. Nitrate supplementation attenuates As(V) toxicity in *Solanum lycopersicum* L. cv Pusa Rohini: Insights into As(V) sub-cellular distribution,

photosynthesis, nitrogen assimilation, and DNA damage. **Plant Physiology and Biochemistry 2019**; 139: 44-55

2. 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

3. 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

4. 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

5. 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

6. A. Agnihotri, **C.S. 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

7. A. Agnihotri, **C.S. Seth*.** Phytoremediation: A Better and Cleaner Way. **The Botanica 2015**; 64 & 65: 156-163 ISSN: 0045-2629

8. 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**

9. **C.S. Seth*,** V. Misra. Changes in C-N metabolism under elevated CO_2 and temperature in Indian mustard (*Brassica juncea* L.): An adaptation strategy under climate change scenario. **Journal of Plant Research 2014;** 127: 793-802

10. **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

11. **Chandra Shekhar Seth*,** V. Misra, 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.

12. **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.

13. **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(2): 334-346.

14. **Chandra Shekhar Seth*,** V. Misra, R.R. Singh, Lello Zolla. EDTA-enhanced lead phytoremediation in sunflower (*Helianthus annuus* L.) hydroponic culture**. Plant and Soil 2011;** 347: 231-242

15. 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.

16. **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.

17. **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.

18. **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.

19. P.K. Chaturvedi, **Chandra Shekhar Seth,** 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.

20. 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.

21. 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.

2. Books/Monographs (Authored/Edited):

1. Agnihotri, **C.S. Seth***. *'Transgenic Brassicaceae: a promising approach for phytoremediation of heavy metals'* in Prasad MNV (ed.) T*ransgenic plant technology for remediation of toxic metals and metalloids.* **2019, pp 239-255 (Elsevier, ISBN: 978-0-12-814389-6).**

2. **Chandra Shekhar Seth.** *Mechanism of cadmium phytoextraction in Indian Mustard.* Publisher: LAP LAMBERT Academic Publishing GmbH & Co. KG, Dudweiler Landstr. 99, 66123 Saarbrucken, Germany. Year of Publication: **2011; ISBN: 978-3-8443-2384-9**

Publication in the last one year

1. Praveen Gupta, **Chandra Shekhar Seth***. Nitrate supplementation attenuates As(V) toxicity in *Solanum lycopersicum* L. cv Pusa Rohini: Insights into As(V) sub-cellular distribution, photosynthesis, nitrogen assimilation, and DNA damage. **Plant Physiology and Biochemistry 2019**; 139: 44-55

2. A. Agnihotri, **C.S. Seth***. *'Transgenic Brassicaceae: a promising approach for phytoremediation of heavy metals'* in Prasad MNV (ed.) T*ransgenic plant technology for remediation of toxic metals and metalloids.* **2019, pp 239-255 (Elsevier, ISBN: 978-0-12-814389-6).**

3. 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):

1. Member of organizing committees for National Conference on Plant Science Research organized by Society for Plant Research and Department of Botany, University of Delhi during **Feb 5-7, 2016**

2. Agnihotri A, **Seth C.S.*** Exogenous jasmonic acid counters pb toxicity by regulating the photosynthesis and Pb accumulation in *brassica juncea* L. PP 28: Poster presentation in International Conference on Changing Environmen: Understanding the Emerging Challenges and Their Management Strategies organized by Zoology Department, Kalindi College, University of Delhi from **April 10th - 12th, 2019.**

3. Dharmendra Kumar, **Chandra Shekhar Seth*** Foliar application of Titanium-dioxide nanoparticle (TiO_2 NPs) revamps morpho-physiological parameters in Sunflower (*Helianthus annuus* L.) against Cr(VI) toxicity. Poster presentation in International Conference on Nanobiotechnology organized by Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia from **February 5-6, 2018.**

4. Ashish Agnihotri, **Chandra Shekhar Seth**. Salicylic acid helps in amelioration of lead toxicity in Brassica juncea (L.) cv. Varuna. Poster presentation in National Seminar on Recent Advances in Environmental Toxicology organized by Jamia Millia Islamia, New Delhi from **20 February to 14 March, 2017**

5. 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**

Research Projects (Major Grants/Research Collaboration):

- **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).

- **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).

- **2013-14:** Principal investigator for project entitled 'Study on role of phytochelatins and glutathione in tolerance to heavy metal accumulation in *Brassica juncea* L.' 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
- CSIR-NET-JRF
- CSIR-NET-SRF

Association With Professional Bodies

Memberships of academic bodies

- 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

Reviewing:

- Project reviewer for SERB-DST
- Manuscript reviewer for Environmental and Experimental Botany, Journal of Plant Physiology, Plant Physiology and Biochemistry

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.