

CV of Dr Dinesh K Saxena

**Dt of Botany and Incharge P G D Environment Management ,
Bareilly College, Bareilly, UP, India**

Also appointed as **Chair Professor** (Ford Foundation), Department of Environment Engineering, Kathmandu University, Nepal in 2008

Address Home:	Dr Dinesh K Saxena c/o Prof. (Mrs.) Shashi Rani (wife), Deemed University, D -1 Old Type , I. V. R. I, Izatnagar, Bareilly, U P	Tel: (0) 2301860 STD Code: 00 91581 Mobile: 09457874240, dineshsaxenabc@rediffmail.com dinesh.botany@gmail.com
Office:	Dr. Dinesh K Saxena <i>Associate Professor,</i> Incharge: P. G. D. Environmental Management Bareilly College, Bareilly, UP India <i># also appointed as Chair Professor in 2008</i> Dr Dinesh K Saxena <i>Chair Professor, Environment Science & Engineering, (Ford Foundation)</i> Katmandu University, Katmandu, Dulikhel, Nepal Likely to join soon	Tel 0091 0581 2567170 Fax: 0581 25784725 dinesh.botany@gmail.com www.bareillycollege.org

Employment History: all positions held - starting with your present employment and going back to the first

<u>Organization</u>	<u>Designation (Approx. Gross Annual Salary)</u> *	<u>Key Responsibilities</u>	<u>Dates</u>	
			<i>From</i>	<i>To</i>
Bareilly College	1975 as Lecturer	Research and Teaching in the department	1975	1986
Bareilly College Present salary	Associate Professor /Botany, (1987) 71,890/ pm	Research and Teaching work in the department	1986	Cont...
Bareilly College	1998 as In-charge in "P.G.D. Environmental Management"	-Teaching and supervising Environment Management Course in Bareilly College since 1998. Course was exclusively designed by me and opened in this center affiliated to M J P university. Students passed out are working in the industries. -Course involves teaching and research projects designing related to the water pollution, analysis and its treatment strategies, ground water conservation, river pollutants monitoring and analysis, Air and industrial stack sampling, air analysis, and its management. Course includes soil, waste and biomedical waste management strategies, climate change studies, carbon sequestration, alternative energy, Elevated CO ₂ and Forest covers development. -Supervising the P. G. Department. Environment Management, visiting industries as a consultant, on the environment issues, supervising research work on environmental related local problems, -co-coordinating to inter-national scientific programs.	1998	Conti. Enclo.
Name, Address Organization:	Bareilly College, Bareilly			

Designation and Job Description:	<p>(a) Associate Professor in Botany and Incharge of P. G. D. Environment Management.(*)</p> <p>Department was established by me enrolls the 30 students every year for the environmental Education at graduate level. We teach ecology and different aspects of pollutions (air, water, industrial, noise, waste, radio-nuclides,) and their biological managements. It is to inform that we have all latest expensive instruments (personal and from the support of national funding agencies) used for the monitoring and analysis of water, air and industrial effluent parameters.</p>
Interest and specialization	<p>(a)Ecology and different aspects of pollutions (air, water, industrial, noise, waste, radio-nuclides,) and their biological managements</p> <p>(b) Carbon sequestration, C02 studies, Ozone studies, Climate change studies</p> <p>Amongst the 80% instruments procured from different research projects belongs to PI (Dr Dinesh K Saxena), are: Atomic absorption spectrophotometer, UV-IR spectrophotometer, Metrological kit, Infra-red thermometer, GPS system with GPS track recorder, Photo System, Photosynthetic Efficiency Analyzer, X-ray Fluorescence, Growth chamber, note book, micro-Kjeldahl, Sauxhlet, Flame photometer, computers, BOD incubator with humidity control device, Flow meter, Light meter, Soil pH meter, Soil moisture meter, High volume air sampler for CO₂, NO_x and SO_x RSPM, SPM, Stack monitor, pH meter, Soil moisture meter, Conductivity meter, Dissolved oxygen kit, Portable D. O. analyzer, D.O. electrode, -Modeling of Environmental parameters by Global Positioning satellite System (GPS).Growth chamber, turbidity meter,</p>

Current Employment: in

Associate Professor, Department of Botany &

Incharge: P. G. D. Environmental Management, Bareilly College, Bareilly, UP India

Also appointed as Chair Professor (Ford Foundation) Department of Environment Engineering, Kathmandu University, Nepal in 2009 (Salary offered: Rs 100,000/, Taxable)

Relevant Teaching Experience: Relevant experience possess by me relating to key aspects of the job has been given in the space below: **30 years in Botany & 10 years as incharge in P.G.D. Environment Management.**

Advance Environment Training:

1- Advance training on “Aquatic Weed Management”, U.S.A., Gainseville, University of Florida in 1984.

2- Application of Computer on Bryo-Ecology, Michigan Technological University, U. S. A. 1989.

3- **Globe Environment Teachers Training** by the support of **Ministry of Environment and Forest, University of Columbia** and **NASA** in 2005 at Shimla.

RESEARCH COMMITMENTS:

a) Completed Research Projects (National levels):

- (i) Department of Science and Technology, India: 1986-1988 Rs 2.1 L “ Analysis of effluent quality of WIMCO effluent of Bareilly.”
- (ii) University Grants Commission, India: 1989-1991 Rs 5.0 L “Ecological Study of *Azolla*.”
- (iii) University Grants Commission, India: 1996-2000 Rs 7.9 L “*Sphagnum* for Air quality monitoring”
- (iii) Department of Biotechnology, India: 2002-2005 Rs 23.0 L “Monitoring of metals by mosses.”
- (v) Ministry of Environment & Forest, India. 2004-2007 Rs 26.0 L “ Large scale monitoring ... metals.”

b) On Going Research Projects (National Levels):

- (i) University Grants Commission: **2007-2010** Rs 9.0 L “ Metals pollution in vegetables.”
- (ii) Ministry of Environment & Forest, India **2009-2012** Rs 29.0 L) “Retrospective multi-elemental profile of India.”
- (iii) State Pollution Control Board , U.P **2009-2014** Rs 6.17 L/ per year “Monitoring of CO₂, NO_x, TSP, R.S.P.M. of Bareilly” State Pollution Control Bord, Lucknow
- (iv) Central Pollution Control Board ,New Delhi **2009-2010** Rs. 8.4 L /y per each station (Nainital, Almora, Pithoragarh and Dehradon) of Himalayan belt . “Monitoring of CO₂, NO_x, TSP, R.S.P.M.
- (v) “CO₂ Sequestration study using bryophytes.” Department of Science and Technology: **2009-2014** “Climate Change Studies –response of elevated CO₂ and its sequestration” –DST funded program

Research Component	Title Research Projects *	(in years)
Specialized Research Projects:		
1. Department of Science and Technology, India	1. “ Analysis of effluent quality of WIMCO effluent of Bareilly.”	1986-1988
2. University Grants Commission, India	2. “Ecological Study of <i>Azolla</i> .”	1989-1991
3. University Grants Commission, India	3. “ <i>Sphagnum</i> for Air quality monitoring”	1996- 2000
4. Department of Bio Technology, India	4. “Monitoring of metals by mosses.”	2002-2005
5. Ministry of Environment , India	5. “ Large scale monitoring ... metals.”	2004-2007
6. University Grants Commission, India	6. “Metals pollution in vegetables.”	2007-2010
7. State Pollution Control Board,	7. “Monitoring CO ₂ , NO _x , TSP, R.S.P.M. of Bareilly”	2009-2012
8.	8.	2009-2013
a-PhD supervised	1-Eleven students	
b-Dissertation	2- Eight students from different Indian universities has completed their projects successfully.	
Research Grant Assessor/Reviewer	<ul style="list-style-type: none"> • Ministry of Environment, Govt. of India • Department of Science and Technology SERC • University Grants Commission • Australia – India Strategic Research Fund, AISRF 	

	<ul style="list-style-type: none"> • Hungarian Academy of Sciences • Central Pollution Control Board 	
AWARDS (1) Young scientist award (1b) Best paper award (2) World Bank Award-development technology on environment 2.b Commonwealth Academic Fellowship Award, UK -2010.	DST, 1989 1) 13th Botanical Congress held in Australia, Awarded 100 \$ for as young participants . (2) “WORLD BANK” award of Rs 20,000 on “Development of Technology for use of Waste-Water instead of Bore Water for Car Washing at Automobile Showroom “ . Out of 2500 projects submitted to world bank mine one was selected. The function was chaired by Hon President of India- Dr Abdul Kalam . see enclosure. It is great honor to me. See webpage of President of India: www.presidentofindia.co.in dt. 28 May, 07 see or World Bank –IDM Award , 2007 . -Selected for the Commonwealth Academic Award in 2010 by University Grants Commission, New Delhi. To work with professor Peter Hooda of the Kingston University, UK	Enclo: Enclo: Enclos:
Completed Projects: (International)		
1- DST-NTTK Hungary 2- INSA-HAS On-Going International Research Projects 1- Indio-Russian- DST proposal .2011 Visits of Foreign Scientists in 2010 2- India-Poland (INSA-Poland collaboration)-2010 3- Michael Luith (bryologist) International Workshops Organized by me in 2007. “International Workshop on Metal Monitoring -2011”	1-Indo-Hungary Bilateral Research Program: 2002-2004. Funded by Department of Science and Technology, Ministry of Science and Technology, Govt. of India. A joint study was conducted in collaboration with Prof Zoltan Tuba, D. Sc., Head of Environment and Botany of Szent Istvan University, Godollo, Hungary on “Responses of elevated CO ₂ on mosses” 2-Indo-Hungary Bilateral Research Program: 2004-2006-. Project was again sanctioned by Indian National Academy of Sciences New Delhi and Hungarian Academy of Sciences in collaboration with Prof Zoltan Tuba, D. Sc., Head of Environment and Botany of Szent Istvan University, Godollo, Hungary. Study was conducted on “Effects of elevated CO ₂ on metal tolerance” Large scale monitoring of air pollutants in India, Nepal and in Russia with Prof Marina 2010 Dr. Hazem M. Kalaji (Department of Plant Physiology, Faculty of Agriculture and Biology, Warsaw University of Life Science- SGGW, Nowoursynowska 159, 02-776 Warsaw, Poland ; ““ Response of high CO₂ and metals on the vegetation and validation of the tolerant species for ‘C’ sequestration”. , Prof Hazam visited my lab during from 15 th December to 15 th January, 2011 Visited in my lab d from 5 th to 31 st December, 2010 Organized an International Workshop-2007 An international workshop was organized in March 2007 by the support of the Prof Zoltan Tuba, D.Sc. on “Drought	Enclo: Enclo Enclosure : Enclos: Enclos:

Visited Abroad

(1984-2000)

- ❖ Several times in European Institutions (UK, Germany, Greece, Austria, Czech, France, Denmark, Swiss, Hungary) and three times in USA-
- ❖ **Aquatic Weed Research** cent at Gainesville Florida University of Florida, 1984. Enclos:
- ❖ Two times at **Michigan Technological University** (1989 & 2000), USA. -Recently from 19th to 31st July, 2007. Enclos:

(2004-2009)

- ❖ 2004: Hungary at Szent Istvan University , Hungary
- ❖ 2005: Hungary, Again at Szent Istvan University by the **INSA-DST bilateral exchange Program visiting Bilateral research Prog**
- ❖ 2005 at Vienna to attend the International Bryological Meet.
- ❖ 2007 July, Malaya University to attend the International Bryological Conference. At Malaysia.
- ❖ 2007 September at Godollo Szent Istvan University, Hungary, INSA-HAS Bilateral Research Program
- ❖ 2007 December at Kathmandu University, for the invited lectures
- ❖ 2008 ABLs Meet in USA, 2008
- ❖ 2008 Ostrava Conference on Sustainable Environment in 2008 in Czech
- ❖ 2009 Germany in 2009 to attend the ICP meet in Feb 2-5th
- ❖ 2010 Belgium to attend the 23rd ICP meet. 1 to 4th Feb 2010 at Belgium
- ❖ 2010 Russia at Dubna Nuclear Research Facility to initiate bilateral research research with Prof Marina for the three weeks from the end of the March, 2010 to second week of the April.

Contribution to the Department:

INTERNATIONAL - REFERENCES:

	<u>REFERENCE 1</u>	<u>REFERENCE 2</u>	<u>REFERENCE 3</u>
Name:	Prof Janice M Glime	Prof Vitezslav Plasak	Prof. Haji Mohamed Abdul Majid
Address:	Professor and President Michigan Technological University, Houghton, 49331, USA	Head, Environment Botany Department, Faculty of Science, University of Ostrava, Clitt ussiho 10- Czech Rep	Professor and Head Biology Department Universiti Brunei Darussalam, Jalan Tungku Link, Gadong, Brunei Darussalam BE1410
Email Id:	jmglime@mtu.edu	Vitezslav.phsek@osu.cz	binabdulmajid@gmail.com
Telephone Number:	906 487 2546	420 60 3346 00	
Organization:	Michigan Technological University, USA	University of Ostrava	Biology Department University Brunei Darussalam,
Designation:	Professor and President IAB	Professor and Head	Professor and Chairman Head of Ph.D School
Your Professional Relationship with the Referee:	Academics/Research Ecologist, bryologist	Academics/Research Botanist/ ecologist/environmentalist	Academician/Research, Expert on CO ₂ studies Environmentalist

References: Indian scientists to whom I know:

:(1) **Dr Virendra Nath**, Deputy Director, Director grade, National Botanical Research Institute, Rana Pratap Marg, Lucknow , Ph 09415025032, drvirendranath2001@rediffmail.com, drvirendranath46@rediffmail.com

(2) Professor Sunita Kapila , House No. 2368, Sector Chandigarh- Punjab, India 09872629092 s_kapila0802@yahoo.co.in
(3) Prof P B Khare , Deputy Director, National Botanical Research Institute, Lucknow, India kharepb@yahoo.com
(4) Dr M M Swamy , Professor and Head, Department of Environmental Engineering, S.J. College of Engineering, Mysore - 570 006, Karnataka, India, mmswamy_20@yahoo.com
(5) Prof S P Singh , Hon Vice Chancellor, H N B University, Srinagar, Garhwal, surps@yahoo.com
(6) Dr D K Singh , Deputy Director, Botanical Survey of India, Salt Lake, CGO Complex Kolkatta, 700064, drdk@rediffmail.com , 913323214050
Research Activities: Involve in research work since last 20 years.
Research Papers : 65
Research students: 11 awarded Ph D under my supervision, two have submitted, and 3 are ready to submit and 4 are registered .
Books Published : two, one in co-author ship of an American Professor Janice M Glime Other book is Funded by University Grants commission
Current research studies are focused at: -Large scale bio-monitoring of trend of metal precipitation in India. -Climate change, CO ₂ sequestration studies -Effect of elevated CO ₂ on productivity of vegetables for the future., Carbon dioxide --Sequestration studies in collaboration with the Industry -Recycling of waste water for different uses. -On line monitoring of the Gas (RSPM, SPM, NO _x , SO _x , CO ₂) under National Air Monitoring Program of the Central Pollution Control Board , New Delhi at different places of UP, Garhwal, Kumaon, and in Himanchal
Collaborated Research Project with Industry: DST-TDS (Environment Technology Development Program) 2007-2010
Research proposal with M/S Dwarikesh Sugar Industry, Bijnore has been taken to develop the technology on CO ₂ sequestration and green fuel production.
Consultancy
Providing consultancy to different industries on Environment Parameters (Air, Water Effluent Testing and Carbon Credits.) (a) Century Paper Mill, Lal Kuan (b) Dwarkesh Sugar Mills, Bijnore (c) Indian Farmer Fertilizer Co , Aonla (d) Central Pollution Control Board S ₉ x, N ₀ x, Ozone . RSPM monitoring

Dinesh K Saxena PUBLICATIONS (LAST THREE YEARS)

Dinesh K. Saxena, Hazem M Kalaji, and Dheerj, 2011, Large scale atmospheric monitoring by mosses in India: A conceptual approach. 24th Task Force meeting , 31- 2nd Feb, (ICP vegetation, Center for Hydrology) 2011, Rapperswil-Jona, HSR-Hochschule Rapperswil, Oberseestrasse, 10, Page 28-29

Dinesh K. Saxena, Kajal Srivastava¹, Shivom Singh, 2011, Assessment of metal accumulation in moss in relation to atmospheric emission source in Utrarakhand, India, 24th Task Force meeting , 31- 2nd Feb, (ICP vegetation, Center for Hydrology) 2011, Rapperswil-Jona, HSR-Hochschule Rapperswil, Oberseestrasse, 10 page 30,

Dinesh K. Saxena, Sonyia and Suarabh. **2010**. First report of the moss *Rhynchostegiella divaricatifolia* (Renauld & Cardot) Broth. from Western Himalayan region of India , *Phytaxa*, U.K, . 8: 59–64.

Dinesh K. Saxena and Manoj Joshi **2010** “Monitoring the trend of lead deposition in leaves of *Spinacea oleracea* Linn. during the three years” . Vietnam Conference

Zoltan Tuba†, **Dinesh K. Saxena**, Kajal Srivastava1, Shivom Singh1, Szilard Czobel and Hazem M. Kalaji. **2010** Chlorophylla fluorescence measurements for validating the tolerant bryophytes for heavy metal (Pb) biomapping . *Current Science* , VOL. 98, NO. 11, 10, 1505- 1508 JUNE .

Dinesh K. Saxena and Md. Saiful-Arfeen. **2010**. “Active biomonitoring of atmospheric elemental deposition by *Bryum* species around Almora, Nainital and Pithoragarh of Kumaon hills.” is accepted for publication in *Nature Environment and Pollution Technology*. 9(1):1-12, 2010

Dinesh K. Saxena, Shiv Om and Kajal, **2010**. ‘Assessment of metal accumulation in *Rhodobryum roseum* in relation to atmospheric emission sources in Uttarakhand, India’. 23rd Task Force Meeting of the ICP Vegetation, to held on 1-3 February, Tervuren,. Belgium

Dinesh K Saxena., Tuba, Z., Arfeen, M. S., **2010** a. Seasonal passive metal monitoring during year 2003 to 2006 in Nainital of Kumaon hills (INDIA) by moss *Racomitrium crispulum*. *Acta Botanica Hungarica*. 52(3-4), pp. 399-423, 2010, 2010

Dinesh K. Saxena and Md. Saiful-Arfeen. **2010**. “Metal deposition pattern in Kumaon Hills (India) through active monitoring using moss *Racomitrium crispulum*.” *Iranian Journal of Environmental Health Science & Engineering*. Vol. 7, No. 2, pp. 103-114.

Dinesh K. Saxena, Kajal Srivastava and Shivom Singh **2010**, “Spatial and temporal analysis of the atmospheric metals using moss from Kumaon and Garhwal regions of the India –a conceptual approach” .In Proceeding “2nd **International Conference on Environmental Research and Technology- Research and Innovation Towards Environmental Sustainability**” . 2-4 June , University of Sains, Penang, Malaysia.

Dinesh K. Saxena and Md. Saiful-Arfeen **2010**. Ambient air quality measurement for metals through bryophyte and ecophysiological response” In “**Proceeding of International Conference on Global Climate Change**” , 19-21st February,

Dinesh K Saxena* and Manoj Joshi, 2010 Seasonal Variation in Zn Contamination in the Vegetable *Spinacea oleracea* Linn., during 2006-2008, Vegetos, Vol. 23 (1) : 125 – 135 (2010)

Accepted: 2009

Dinesh K. Saxena*, Md. Saiful-Arfeen. **2009** Exsitu metal estimation of Kumaon Hill (INDIA) Using moss *Racomitrium Crispulum* as Biomonitoring organism. *Taiwania*. (accepted)

Dinesh Saxena* and Arti Singh **2010** a . Screening of the Liverworts *Marchantia polymorpha* (Linn.) and *Plagiochasma appendiculatum* (Lehm. and Lindeb.) for their antimicrobial Property. *J.I.B.S*, India. (accepted)

Dinesh Saxena, Arti singh and Rishendra Verma. **2010**. Antibacterial activity of liverwort *Astellia* . *Journ of Punjab University*, Chandigarh/. (accepted)

2009

Dinesh K. Saxena and Md. Saiful-Arfeen. **2009** “Taxonomy and distribution status of moss *Racomitrium crispulum* in Kumaon hill of Western Himalaya (INDIA)” is published in *Iranian Journal of Botany*. Vol. 15 (2): 248-256.

D K Saxena and Prasad 2009 Bryoflora of Baphlamali Hill in Eastern Ghats of Orissa, India The Eastern Ghat E P T R I , ENVIS News **Letter**, ISSN : 0974-2336, Vol. 15, No.1, 2009

Saxena, D.K. Srivastava, K. Singh, S. **2009**. Monitoring of metal precipitation (2003-2007) by moss *Barbula constricta* from Mussoorie hills in India. 22nd Task Force Meeting, of the ICP Vegetation, Page- 33, 2 – 5, February, Braunschweig, Germany

Dinesh K. Saxena , Saiful and Harinder **2009**. Effect of forest fire on bryocommunity of Kausani, **India**. *Indian Journal of Forestry* . Vol. : 32 (1): 13-22.

Dinesh Kumar Saxena and Md. Saiful-Arfeen **2009**. Effect of Cu and Cd on Oxidative Enzymes and Chlorophyll Content of Moss *Racomitrium crispulum*. *Taiwania*, 54(4): 365-374.

Dinesh K. Saxena, Md. Saiful-Arfeen and Harinder Kaur. 2009. “Effects of prescribe burning of deodar and pine forest on bryocommunity of kausani (India)” is published in *Indian Journal of Forestry*. Vol. 32(1): 13-22, 2009.

2008

Dinesh. K. Saxena, Kajal Srivastava and Shiv Om Singh. **2008** Biomonitoring of metal deposition by using moss transplant method through *Hypnum cupressiforme* (Hedw.) in Mussoorie. *J Environ Biol.* 29 (5), 683-688.

Dinesh. K. Saxena, Kajal Srivastava and Shiv Om Singh. **2008** Application of moss *Barbula* sp. for retrospective metal data of last one decade from Mussoorie city of Garhwal hills, India.” *Environmental Changes and Biological Assessment IV*, Ostriva. 2008. pp.178-182

Dinesh. K. Saxena, Shiv Om. Singh and Kajal. Srivastava. **2008** Biomapping Studies from India: Use of Moss *Isopterygium Elegans* for Measuring Seasonal Metal Precipitation in Garhwal by Transplant Technique. In: *Haji Mohamed, Baki Hj Bakar, Amru Nasrulhaq Boyce and Patrick Lee (editors). Bryology in The New Millennium*, , p. 343-356

M.V. Frontasyeva and **D.K. Saxena**. **2008**. Multi-element analytical techniques for interspecies calibration of the European and Asian moss. FLNP JINR Annual Report, Dubna, 2008

Dinesh K. Saxena, Kajal Srivastava, and Shiv Om Singh. **2008**. Retrospective metal data of the last 100 years deduced by moss. *Barbula* sp from Mussoorie city, Garhwal Hills, India. *Current Science*, 94: 7-10.

Dinesh K. Saxena, Shiv Om Singh and Kajal Srivastava. **2008** Atmospheric heavy metals deposition in Garhwal hills area (India): Estimation based on native moss analysis. *Aerosol and Air Quality Research*, 8 (1): 94 -111.

Dinesh. K. Saxena, Kajal Srivastava and Shiv Om Singh. **2008** Assessment of atmophile elements in moss *Barbula vinealis* Brid., Br. Univ. and assessment of contamination in the regions of Garhwal hills. *Journal of Indian Botanical Society*, 87 (1& 2): 125-131.

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. 2008 Biomapping of atmospheric metals fall by moss *Rhodobryum roseum* by active transplant technique in Mussoorie city of Garhwal Hills. *I. J. E. .P* :28 (10):905-913.

2007

Dinesh. K. Saxena, Kajal Srivastava, and Shivom Singh “Studies on *Barbula* species from Kumaon and Garhwal hills of Uttaranchal region (India)” *Proceedings of National Academy of Sciences, India*, **2007**, Vol. 77 (B), II: 215-219.

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. "Moss bag technique for monitoring metal precipitation" *Environmental Conservation Journal*, **2007**, Vol. 8 (2): 16-21.

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. , **2007**. “Calculation of bryoflora richness based on Index of Atmospheric Purity (IAP)”. In: *Phytochemical a potential therapeupant for critical disease management*. Chapter-22, pp-107-111. Daya Publication House, New Delhi.

Dinesh. K. Saxena, Kajal Srivastava and Shivom Singh. **2007** “Biomapping of seasonal trend of trace metals at petrol pump and bus station on Kumaon hills: using transplants technique”. *Environmental Protection*, Vol.27 (7) : 604-616.

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. **2007**. “Taxonomy of moss *Isopterygium elegans* (Brid.) Lindb., Not Sallsk. F. Fl Fenn. Forh., 1874 from Kumaon hills”. *Research Journal (Sci.)*, Panjab University Res Journ., (Sci) Vil 57, 213-216

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Dinesh. K. Saxena, Kajal Srivastava and Shivom Singh. **2007** “Contribution to the knowledge of *Hypnum cupressiforme* Hedw. Sp. Musc. from the Kumaon Hills (Western Himalayas)”. *Research Bulletin (Science)*, Panjab University, Chandigarh.

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. **2007** “Taxonomy of *Rhodobryum* from Kumaon and Garhwal region of Uttaranchal, India.” For publication in *Indian Journal of Forestry*, Dehradun.

Dinesh. K. Saxena, Kajal Srivastava and Shivom Singh. **2007** “First survey of atmospheric metal deposition in Garhwal hills (India): By using native moss analysis technique”. *Journal of Experimental Biology* (New Delhi). In press

Dinesh K Saxena: **2007** Report on the international workshop held on “Biology of Desiccated Tolerant Plants” held in

Bareilly College Bareilly. *Bryological Times*, published

2006

D K Saxena & Saiful A. 2006. Screening of Pb tolerance in *Bryum cellulare* Hook & *Plagiochasma appendiculatum* L. ET. L. under growth response. *J. Phyto. Res.* 9 (1) 83-87.

D K Saxena & Saiful A. 2006. Biomonitoring and interspecies comparison of metal precipitation through bryophytes at petrol pumps on Kumaon hills. *Environmental Conservation Journal.* 7 (3) 69-77.

D K Saxena & Saiful A. 2006. Effect of pH and substrate variability on the nitrate reductase activity of experimental moss, liverworts, and angiosperm plants. *J. Phyto. Res.* 19 (1) 19-22.

Dinesh. K. Saxena 2006 " *Biomonitoring heavy metals in India. The Bryological Time.* 10 October

D K Saxena & Saiful A 2006. Role of bryophytes in contour farming. *Agrobios. New letter.* December V. Col Vol. No: 7
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Dinesh K Saxena and Harinder 2006. Effect of heavy metals stress. (Pb, Ni, Cd) on protein, and Fat of the moss. *Thuidium cymbifolium.* (Doz. and Molk.) Doz. And Molk. *Environmet Conservation Journal.*, 7(1&2) 69-74.

Dinesh K Saxena and Harinder 2006. Chlorophyll as biological markers.....moss *Thuidium cymbifolium.* *Journ. Phyto. Res.* Vol 19, 2.1-23

Dinesh. K. Saxena, Shivom Singh and Kajal Srivastava. 2006 " Distribution of Some Mosses in Nainital, Almora and Pithoragarh District of Kumaon Region, India." *Environmental Conservation Journal*, 2006, Vol. 7: (1-2), 83-87.

Dinesh K Saxena and Saiful A 2006. Response of nitrate activity and antioxidant defense system in moss *Racomitrium crispulum* (Hook f et wils) to lead and zinc toxicity. *Physiol. Mol. Biol. Plants.* 12(4) 303-306.

2005

Dinesh K Saxena & Anuj Saxena 2005. Need for legislative impediments to avoid mass harvesting of bryoflora, *Curr Science*, VOL. 89, NO. 8, 25 OCTOBER 2005

Dinesh K Saxena & Harinder Kaur 2005. Effect of cadmium and nickel toxicity on the peroxidase activity and carotenoids content in moss *Thuidium cymbifolium.* *Indian Journ Plant. Physiol.* Vol 10, No p 3937-399.

Dinesh K Saxena and Harinder 2005. Potential of bryophytes in forest establishment. *Indian Journ of Forestry.* Vol. 28 (4): 425-428.

Dinesh K Saxena and Ruchika ganagwar; 2005 Taxonomical study of *Dicranum scoparium* Hedw. From Kumaon hills. *Geophytology*:35 (1& 2).

Membership/Life Member Academic Bodies

National:

1. Indian Science Congress. (LM)
2. Indian Botanical Society. (LM)
3. Society for Plant Research, publishing Journal (*Vegetos*). (LM)
4. Indian Bryological Society, Lucknow. (LM)
5. Tropical Ecology, Varanasi.
6. Indian Paleo-botanical Society, publishing Journal *Geophytology*. (LM)
7. Air Pollution Research Delhi Chapter, publishing Journal "Air Pollution Research
8. Ecology, Environment Conservation
9. Indian Association For Environment Management, NEERI publishing *Journal of Environment Engineering.* (LM) and Fellow
10. Society of Environment Awareness, Secretary by DKS

11. Environmental Botanist , N B R I, Lucknow (LF)

International:

1. International Bryological Society, USA
2. Biomapping Group, Vienna, Studies are related to Environmental Mapping.
3. Aquatic Weed Management Society, Gainesville, University of Florida. (LM)
4. Society for the Water Research, UK
5. International Association of Water Quality, UK
6. IAWPRC specialist group, U.K., Macrophytes water pollution control
7. International Association of Air Quality, UK
8. Australian Bryological Society
9. Bryo-Net Group, USA
10. U N E P new Group
11. International Association of Environmental Botanist, Lucknow
12. New York Academy of Sciences (Fellow)
13. EU-ECE (European Union of Economic Commission on Environment)
14. Tropical Ecology

E Society:

1. Bryonet
2. Australian Botanist news group
3. UNEP News group, USA
4. World-Bank Environment News group
5. Waste Management e, news group, US
6. Page Scientist, Switzerland
7. Globe (Global Environment Teachers, US)

LM=Life member

RECENT ACHIEVEMENTS

My academic and research dedication is evident by that I am the person, prepared the DST-FIST proposal in March 2008 for the award of the funds from national funding organization “**Department of Science and Technology**” for **development of the departmental infrastructure and** , we got the grant (DST -FIST) in the year 2008 of **Rs 0.42 crore**.

1. Further I have a collaborating bilateral research program with the **Russian Nuclear Physicist Scientist Professor Marina**, by the support of the **DST -FNR** for the three years.
2. An industrial collaborative program in progress on the “**CO₂ sequestration from the stack and its conversion in to hydrocarbon and fuel**”. This program is by the support of the DST and DBT.
3. An inter national project on “Large scale national bio-mapping of metals ” by the support of the International Cooperation Program funded by **UNECE. (United National Economic Commission on Environment) in 2009**.
4. A bilateral research program is under progress in collaboration with **Professor Kalaje of Poland** on “**Climate Change studies : “Response of elevated CO₂ and metals on Productivity.”**”
5. A collaborative **DST DBT GITA-2010**, a bilateral research program with **Prof Liette of Canad** has been approved
6. Another proposal has been approved under **INSA and PAS (Polish Academy of Sciences)** and a polish scientist **Prof Hazem Kalaje** is visiting in my lab to work from **December 15 , 2010**.

Professor Peter Hooda from Kingston University, USA is visiting my lab from **5th August** on the **Energy Saving technology and monitoring of elevated CO₂**.



KATHMANDU UNIVERSITY

Dhulikhel, P.O. Box 6250, Kathmandu, Nepal
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Ref: 34/78/065/066

August 14, 2008

Dr. Dinesh Saxena
Department of Botany and
In-charge PGD Environmental Management
Associate Professor in Botany
Bareilly College
Bareilly, UP
India



Sub: Appointment Letter

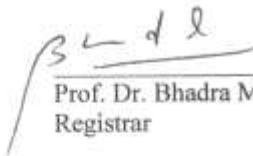
Dear Dr. Saxena,

With reference to the advertisement published in various newspapers in Nepal, India, Pakistan and Bangladesh for the post of Chair Professor supported by Ford Foundation and the interview held on Dec 16, 2007 at Kathmandu University, Central Office, Dhulikhel. We are pleased to inform you that the Executive Council of Kathmandu University has decided to appoint you as a Chair Professor in Environmental Science. The terms and condition of your appointment is attached herewith.

We welcome you to participate in the University's academic program and hope that you will add significant value to the academic and professional activities of the University.

Thanking you

Yours sincerely,



Prof. Dr. Bhadra Man Tuladhar
Registrar

CC:
Office of the Vice Chancellor, Kathmandu University
Office of the Registrar, Kathmandu University
Dean, School of Science, Kathmandu University
Dean, School of Engineering, Kathmandu University
Finance Division, Kathmandu University
Central Library, Kathmandu University
The Ford Foundation, New Delhi



World Bank Award Ceremony:

Dr Dinesh with Hon President of India (**Dr A P J Kalam**) on 27th May, 2009

www.presidentofindia.org

(award was given on the designing of the technology (recovery of car waste water for reuse)

Brief write up
Dr Dinesh K Saxena

My self Dinesh, is working as Professor in Department of Botany” and Incharge of the P. G. D. Environment Management.

I have an experience of 20 years in teaching ecology and environment and as well as of 10 years as incharge and professor in P. G. D. Environment Management.

The course P G D Environment Management, was designed by me 14 years before and I was appointed as incharge of the same. Since then I am imparting theoretical and practical education to the students and as well as jobs through the career counseling in this field. HRD personals of the leading manufacturer units and industries are invited to train the students, give exposure on the issues related to the environment, facilitate environmental trainings for the students in the industries. Assistance is given to students for environment training, projects work and jobs.

Present Environment Course, is totally professional and job oriented deals with the **air, water**, industrial effluent, waste management, its analysis, issues related. An emphasis has been given to the studies related to the climate changes, **carbon trading, carbon sequestration, environmental technology (alternative energy: hydrogen, solar and energy from waste)**. Important aspect is that we have modern instruments for the students to give exposure to handle and measure the all data related to the environment.

Passed out students are also trained to open their environmental consultancy.

In 2008, I was appointed as **Chair Professor** (Ford Foundation) in **Department of Environment and Engineering at Kathmandu University, Nepal** (see scan copy of appointment attached).

My field of research is given below:

My brief contribution in the field of research is evident by the different research projects related to the environment were awarded to me by different national and international scientific funding agencies. A list of projects, successfully completed, has been enclosed along with current (on going) and pipe line projects.

During research program, I was associated with scientists, research groups of Britain, Hungary, Russia, Germany and U.S.A.

Field of research

-Climate Change studies (forest cover and elevated CO₂ studies).

-Carbon Sequestration studies by

(a) exploring the species having high CO₂ fixation rate.

(b) validating certain algae that can help in sequestration of the CO₂ and can utilize their biomass is for ethanol and other multiple use.

-Responses of elevated CO₂ on the forest cover, vegetables, productivity and on tolerance

-Online national monitoring of the atmospheric gas (SO_x, NO_x, CO₂, R S P M and T S P)

-Large scale monitoring of metals to develop atmospheric multi-elemental profile of the country.

-Develop the technology to retrieve past atmospheric metal profile using mosses and X-Ray Fluorescence analyzer (*non-invasive* technology).

-Analysis of water, effluent quality and its management.

TEACHING AND INCHARGE P G D ENVIRONMENT MANAGEMENT

(Teaching and research commitments)

Teaching experience: (a) 30 years, (b) Established new Department on P. G. D. Environment Management and at present looking as In charge of the P G D Environment Management

**Topic are being taught by me
P. G. D. Environment Management:**

Principle of Ecology, - Environment, Ecology, Radioactive pollution
Energy and Environment, Conservation, Waste Management

(A) Water, Effluent, Waste water, Sustainability, Eco-friendly Treatment, Environment biotechnology

Groundwater

Hydrology, subsurface, flow, geological considerations, aquifers and wells.

Physical, chemical and biological studies of water bodies

Of drinking, industrial and waste water, Acid-base and redox chemistry, carbonate system, precipitation quantitative assessment of chemical composition and fate of contaminants.

Environment and Sustainability.

Concepts of green design. Involvement of the industries to develop the technology
Water recycling technology-esuriently: such as in wastewater treatment

Environmental Biotechnology: Molecular biology and microbiology applied to the design and treat wastewater, bioremediation, energy conversion.

Water-treatment processes, membranes, advanced oxidation, principles and techniques of water desalination.

Demand Parameters Studies and analysis:

Dissolved Oxygen, Chemical Oxygen Demand. Biochemical Oxygen Demand

Nutrient Analysis:

Total Nitrogen, Ammonical Nitrogen, Nitrite, Nitrate, Phosphate

Mineral Studies and Analysis: I

Floatable, conductivity, Solids, Turbidity

Mineral Studies Analysis: II

Acidity, Alkalinity, Chlorides, Fluorides, silica, Sulphur, Sulphides, Total Cyanides,

Mineral Studies and Analysis: III

Hardness, Calcium and Magnesium, Sodium, Potassium, Iron, Manganese

Element analysis

Aluminum, Arsenic, Cadmium, Copper, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Selenium,

Treatability Studies

Jar Testy, Chlorination, Adsorption, Activated Sludge Studies, Anaerobic Digestion

Analysis of Chemicals Used in Water and wastewater Treatment:

Alum, Bleaching agents, Caustic Soda, Copper Sulphate, Ferrous Sulphate, Filters, Sand and lime, active charcoal

Environmental Microbiology

Fundamentals of microbiology for the environment, physiology, microbial metabolism, basics of genetics, microbial growth processes, introduction to molecular biology. Illustrations from microbiology and pollutants, microbiology and disease, microbiology of bioremediation, wastewater treatment, microbial fuel cells

Project related to the industries

Involvement of the Industries on Environmental issues

Research is in progress on:

- CO₂ sequestration studies with the co-operation of the industry.
- Atmospheric Metal Biomonitoring: current and 100 years old data
- Effluent quality studies and recovery technology
- Develop model on the used water of car wash from garage for the use in agriculture
- Hydrogen as fuel

Instruments Using

Atomic Absorption Spectrophotometer, *non invasive* X-ray Fluorescence analyzer, Induced Couple Plasma Spectrophotometer, Double beam UV IR Spectrophotometer, INAA, Mercury analyzer, Flame Photometer, pH meters, Sauxhlet, kjeldahl, B O D Incubator with humidity control, Photosystem, Chlorophyll Fluorescence Analyzer, Turbidity meter, High Volume Sampler, Stack Sampler, Global Positioning System, Growth Chamber, Ingra Red Gas Analyzer, Infra Red Thermometer.

(B) Air Pollution Studies

Air Pollution:

- Ecology, Environment,
- Air pollutants (Suspended Particulate Matter, Acid gaseous (Sox, NO_x, Cox) Metals Radio-nuclides).
- Introduction to outdoor and indoor air quality, measurement systems, fate of Contaminants

Practical Specialization:

- Analysis of Air samples: (SO_x, NO_x, Cox, metals suspended particulate matter, radio-nuclides)
- air pollution control systems, and particle transport on multiple scales
- Use of industrial CO₂ from the stack for the ethanol production
- SPM studies
- Involvement of the industries to develop technology to harvest the CO₂
- Environmental Chemistry and Microbiology
- Processes in Environmental Biotechnology
- Atmospheric constituents, chemistry of airborne pollutants

Climate:

Fundamentals of global climate change, inputs and assumptions in climate change models, modeling and simulation of the carbon cycle

Sustainability

- aspects of sustainability, energy cycles and accounting. Carbon cycle, emissions and sequestration.
- Energy saving houses.

(C)Technology Development and standardization related to the environment

(a) Carbon and metal sequestration of the atmosphere and from the stack of the industry and Development of Bio-fuel from algal biomass by the harvesting of the smoke from the industrial stack

(b) Hydrogen fuel for the hybrid car

(C) Developing model for the quantification of atmospheric retrospective metal profile

(D) Consultancy

Carbon sequestration, carbon footprint, Energy saving Houses and buildings

Competency in Handling of Following Instruments

Dinesh K Saxena
Dinesh.botany@gmail.com

(a) General Instruments

B.O.D. Incubator, UV –IR Spectrophotometer, Flame Photometer, Light Meter, Refrigerated High Speed refrigerated Centrifuge, pH meter, Laminar Flow, micro-Kjeldahl Apparatus, Sauxhlet, Bacterial Colony Counter, Environment Chamber, rotatory evaporator,

(b) Environment Science

GPS system with GPS track recorder, High Volume Sampler (CO₂, NO_x, SO_x) Analyzer, Atomic Absorption Spectrophotometer, Portable Gas Analyzer, Infra-Red Thermometer, Mercury Analyzer, CO₂ analyzer, NO_x Analyzer, CO analyzer, X-ray Fluorescence Metal Analyzer-XRF (*non invasive*), Turbidity and conductivity meters, Dissolved Oxygen, INAA (Induced Neutron Activation Analyzer used in Russia), Bomb Colorimeter to measure the energy

(C) Related to the Health of the Plants

Measuring the status of Plant health by Photosynthetic Analyzer, Chlorophyll Fluorescence Efficiency Analyzer to measure the efficiency of the plants, Chlorophyll measuring system (*non invasive*),

National Projects awarded to D K Saxena

A) Completed Research Projects:

- (i) **Department of Science and Technology, India: 1986-1988. Rs. 2.10,000** “*Analysis of effluent quality of WIMCO effluent of Bareilly.*”
- (ii) **University Grants Commission, India: 1989-1991, Rs. 5.00, 000** “*Taxonomic Study of Azolla and water quality.*”
- (iii) **University Grants Commission, India: 1996-2000, Rs. 6.90,000** “*Sphagnum for Air quality monitoring*”
- (iv) **Department of Biotechnology, India: 2002-2005 Rs. 23,00,000**
L “*Monitoring of metals by mosses.*”
- (iv) **Ministry of Environment & Forest , India. 2004-2007. Rs 22,00,000** “*Large scale monitoring ... metals in Kumaon regions..*”

B) On Going Research Projects:

1. **University Grants Commission 2007-2010. Rs. 9.00,000** “*Metals pollution in vegetables of Bareilly.*”
2. **Ministry of Environment & Forest, India. 2009-2012. Rs. 25,00,00 0.** “*Retrospective atmospheric metal data from India.*”
3. **Central Pollution Control Board. 2009-2014. Rs. 6.17,000 /year** “*On Line Monitoring CO₂, NO_x, T.S.P., R.S.P.M. of Bareilly*”
4. **Central Pollution Control Board. 2009-2014. Rs. 6.77 L/ per /per station/year** “*Large scale monitoring CO₂, NO_x, TSP, R.S.P.M. of Himalayan regions*”

5 Prepared and submitted proposal to develop infra-structure for the basic and research facility from the **DST-FIST for the department and got grant f Rs 0.42 crore** from DST to develop the same in 2009. Sophisticated equipments are being purchased

INTERNATIONAL PROJECTS

(a) COMPLETED PROJECTS

1. DST-NTTK Hungary: Indo-Hungary Bilateral Research Program: 2002-2004. Funded by **Department of Science and Technology, Ministry of Science and Technology, Govt. of India**. A joint study was conducted in collaboration with Prof Zoltan Tuba, D. Sc., Head of Environment and Botany of Szent Istvan University, Godollo, Hungary on “*Responses of elevated CO₂ on forest cover, productivity parameters*” **Both scientists visited to other countries.**

2. INSA-HAS: Indo-Hungary Bilateral Research Program: 2004-2006- Project was again sanctioned by **Indian National Academy of Sciences New Delhi** and **Hungarian Academy of Sciences** in collaboration with Prof Zoltan Tuba, D. Sc., Head of Environment and Botany of Szent Istvan University, Godollo, Hungary. Study was conducted on “*Effects of elevated CO₂ on metal tolerance in mosses*” **Both group of scientists visited to other countries.**

(b) CURRENT PROJECTS

(1). Indo-Russian Bilateral Research Program: (2011) A research proposal has been sanctioned by Department of Science and Technology Govt. of India and Russian Science Technology FDR, Dubna, Russia on “*Bio-mapping studies of elevated metals in India, Russia and Nepal*” in collaboration with Prof Marina using the Induced Neutron Technology.

(2) -Participation in the ICP – Vegetation Program 2008-cont (international collaborative program supported by European Union of Economic Commission on Environment) : has inducted this center (me) for regular monitoring of the atmospheric metal precipitation from India. Such studies has been taken up for the first time from India and never done before. Since, this region (India) does not has any record on atmospheric metal data, this information will be quite useful for the nation and will be available on ICP-ECE web site. About 36 nations are attached to this program. Professor Herman, Institute of Ecology, Bangor, is co-coordinator for this program. (ICP Vegetation Annual Report 2009/2010=page 40).

(3) INSA- Indo-Poland collaboration:2010 Dr. Hazem M. Kalaji (Department of Plant Physiology, Faculty of Agriculture and Biology, Warsaw University of Life Science- SGGW, Nowoursynowska 159, 02-776 Warsaw, Poland ; “**Response of high CO₂ and metals on the vegetation and validation of the tolerant species for ‘C’ sequestration**”., Prof Hazam is visiting in December 2010

(4) Indo-Hungary collaboration:2010 “Climate change project” in collaboration with Professor **Dr. Laszlo Levai PhD**, Head of Division of Agricultural Botany and Crop Physiology, Debrecen University, Center of Agricultural Sciences, Boszormenyi u. 138, Debrecen, Hungary, to work and stay my department, for a period of 3 weeks or more (in December 2010. The aim of this visit is to develop bilateral research proposal on the topic “**EFFECTS OF ENVIRONMENTAL FACTORS ON HEAVY METAL CONTENTS IN PLANTS. Scientist will meet in December 2010**

PROJECTS IN PIPELINE

(1)Fulbright Nehru Research Program with Professor Philip of USA (2009-2010) on the “ *Develop methodology to validate the metal profile of past 100 years by using mosses.*”

(2)Indo-Russian Proposal: DST –FNR, with professor Marina of nuclear research facility, Russia, Dubna, on large scale biomonitoring of metals in India, Russia and in Nepal

REVIEWERS

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“Hylocomium splendens (Hedw.) B.S.G. and Pleurozium schreberi (Brid.) Mitt. as trace element bioindicators: comparison of bioaccumulative propertie” 27 MAY 2011