

RESUME

Dr. Vinod Kumar

M.Sc., Ph.D., F.A.N.S.F.

Assistant Professor (Stage 2)

Department of Zoology and Environmental Science

Gurukula Kangri University

Haridwar-249 404 (Uttarakhand), India



Personal Profile

Name : Dr. Vinod Kumar
Designation : Asst. Professor of Environmental Science
Date of Birth : August 10, 1980
Date of Joining : March 23, 2011
Address : 86, Gurubakh Vihar (East), Kankhal,
Haridwar-249408, (Uttarakhand), India
Department : Department of Zoology and Environmental Science,
Faculty of Life Science,
Gurukula Kangri University ,
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Educational Qualification

Gurukula Kangri University, Haridwar

- Ph.D. in Environmental Science, Thesis title "Effect of Industrial Effluents Irrigation on Agronomical Characteristics of Two Leguminous Crops *Phaseolus vulgaris* (L.) and *Vigna radiata* (L.)". (2010)
- M.Sc. in Environmental Science, Specialization: Wastewater management (2004)
- B.Sc. (Zool., Bot. & Chem.) (2001)

Academic Experience

Undergraduate : 7 Years
Postgraduate : 7 Years
Ph.D. : 6 Years

Research Experience

2015 to present : As **Assistant Professor (Stage 2)**
Department of Zoology and Environmental Science
Gurukula Kangri University, Haridwar, (U.K.)

2011 to 2015	As Assistant Professor (Stage 1) Department of Zoology and Environmental Science Gurukula Kangri University, Haridwar, (U.K.)
2009 to 2011	As Senior Research Fellow No.1 Professors' Colony, Gurukula Kangri University, Haridwar, (U.K.) -Performed research work on Electrolytic Treatment of Wastewater
2007 to 2009	As Research Fellow Department of Zoology and Environmental Science Gurukula Kangri University, Haridwar, (U.K.) Performed research work on "Effect of Industrial Effluents Irrigation on Agronomical Characteristics of Two Leguminous Crops <i>Phaseolus vulgaris</i> (L.) and <i>Vigna radiata</i> (L.)".

Research Area	
	<ul style="list-style-type: none"> • Agro-ecology • Environmental Pollution Research • Wastewater Management • Bioremediation and • Energy studies

Research Guidance	
At Post-graduate Level	Ten students worked and two students are working for M. Sc. dissertation under my supervision covering important areas of research in the field of Environmental Science .
At Doctorate Level	One student has submitted his Thesis and Three students are working Ph.D. dissertation under my supervision covering important areas of research in the field of Environmental Science . <i>Kindly see annexure "I"</i>

Research Projects carried out	
	<ol style="list-style-type: none"> 1. UGC, New Delhi, Project entitled "Impact of wastewater disposal on ground water, soil and agronomical characteristics of crops grown in the vicinity of Sugar mill at district Haridwar (Uttarakhand)". Duration - 3 years at Department of Zoology and Environmental Sciences, Gurukula Kangri University, Haridwar (Uttarakhand), India. (Budget sanctioned: ₹12, 20000) (Sanctioned).

Research Publications	
Research papers/ scientific articles are published /accepted in Indian/ International Journals of repute.	
Research papers	Published : 80 Accepted : 01 Communicated : 04
Scientific Articles	Published : 04
<i>Kindly see annexure "II"</i>	

Journal/Book Chapters Published : 03

Kindly see annexure "LI"

Books Authored/Edited : 01

Kindly see annexure "IV"

Seminars/Conferences/Orientation/Refresher course

Until 2017 Attended : 34

Kindly see annexure "V"

Seminars/Conferences/Workshop organized

Until 2017 Organized : 05

Kindly see annexure "VI"

Members of Scientific Societies

- **Founder member** of Applied and Natural Science Foundation, Haridwar, India
- **Life member** of Applied and Natural Science Foundation, Haridwar, India
- **Editorial Board member** of Journal of Applied and Natural Science, Haridwar, India
- **Life member** of Foundation of Natural Science and Culture, Haridwar, India
- **Professional member** of International Society for Development and Sustainability (ISDS), Japan.
- **Founder President** of Agriculture and Environmental Science Academy, Haridwar, India.
- **Life member** of Agriculture and Environmental Science Academy, Haridwar, India.
- **Editor-in-chief** of International Journal "Archives of Agriculture and Environmental Science" (eISSN: 2456-6632): An official publication of Agriculture and Environmental Science Academy, Haridwar, India.

Academic Honors

- As **Fellow** of Applied and Natural Science Foundation
- As **Joint Organizing Secretary member** of the World Congress for Man and Nature held at Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar, 2011

Kindly see annexure "VII"

Teaching Experience

- Graduate, Postgraduate and Ph.D. - **Seven** years
- **Seven years** (2011 to....): As **Assistant Professor**, Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar.
- Currently Teaching graduate, post-graduate and Ph.D. classes.

Popular Scientific Articles

Kindly see annexure "VIII"

Invited Lecture/Talk : 01

Kindly see annexure "IX"

Personal Webpages

- a) Cumulative impact factor : 24.13
- b) h-index of institution (As per Scopus):
- c) h-index of individual (As per Scopus): 7
<https://www.scopus.com/authid/detail.uri?authorId=57200152850>
<https://www.mendeley.com/profiles/vinod-kumar97/>
- d) Citation index (last five years: 2012-2017): 143
<https://www.scopus.com/authid/detail.uri?authorId=57200152850>
<https://www.mendeley.com/profiles/vinod-kumar97/>
- e) Research Gate: https://www.researchgate.net/profile/Vinod_Kumar381
- f) Google Scholar: <https://scholar.google.com/citations?user=kG2jvkUAAAAJ>
- g) LinkedIn: <https://www.linkedin.com/in/dr-v-k-sorwal-69456090/>
- h) ORCID: <http://orcid.org/0000-0002-7197-7666>

Sd...

Dr. Vinod Kumar

Annexure "T" (Research Guidance)

At Post-graduate Level (M.Sc. Dissertations)

1. Effect of pulp and paper mill effluent disposal on soil characteristics in the vicinity of Uttaranchal Pulp and Paper Mill, Haridwar (Uttarakhand), India by Mr. Sandeep Kumar in the year 2014.
2. Impact of Glass industry effluent disposal on soil properties in the province of Asahi India Glass Ltd., Haridwar (Uttarakhand), India by Mr. Vishvendra Tomar in the year 2014.
3. Assessment of phytoremediation efficiency of water caltrop (*Trapa natans* L.) using effluent of State Industrial Development Corporation of Uttarakhand Ltd. (SIDCUL), Haridwar (Uttarakhand), India by Mr. Sumit Kumar in the year 2015.
4. Physico-chemical characteristics of pond water at Jamalpur Kalan, Haridwar (Uttarakhand) by Mr. Rohit Kumar in the year 2016.
5. Effect of sewage effluent disposal on soil characteristics at Haridwar (Uttarakhand) by Mr. Rajneesh Singh in the year 2016.
6. Phycoremediation potential of *Spirogyra sp.* using sugar mill effluent by Mr. Prabhav Gautam in the year 2016.
7. Assessment of biogas production from co-digestion of different substrates: A lab scale study by Mr. Mohd. Nadeem in the year 2017.
8. Bio-adsorption treatment of paper mill effluent using leaf powder of *Eichhornia crassipes* by Mr. Akshay Kumar in the year 2017.
9. Nutrients uptake and mycoremediation efficiency of milky mushroom (*Calocybe indica* P&C) grown on sugar mill effluent treated compost and its use for biogas production by Mr. Pankaj Kumar in the year 2018.
10. Effects of selected heavy metals on morpho-anatomical parameters of water lettuce (*Pistia stratiotes* L.) grown in their aqueous solution during phytoremediation by Mr. Ashu Saini in the year 2018.

At Doctorate Level (Ph.D. Dissertations)

1. Impact of industrial effluents disposal on soil and vegetable crops grown in district Haridwar (Uttarakhand) - Roushan Kumar Thakur, 2015 (Thesis submitted on 12/6/2018).
2. Efficacy of water lettuce (*Pistia stratiotes* L.) and water hyacinth (*Eichhornia crassipes* L.) for heavy metals removal from different types of industrial effluents- Jogendra Singh, 2015 (Work in progress).
3. Studies on phytoremediation potential and biogas production from sacred lotus (*Nelumbo nucifera* Gaertn.), water caltrop (*Trapa natans* L.) and water fern (*Azolla pinatta* R.Br.) grown in SIIDCUL effluent- Piyush Kumar, 2017 (Work in progress).

Annexure "II"
(List of Publications of Dr. Vinod Kumar)

RESEARCH PUBLICATIONS

1. **Vinod Kumar** and Chopra, A.K. (2007). Electronic Waste "E-Waste: A New Environmental Threat. *Journal of Natural and Physical Sciences*, 21 (1-2) 45-50 (**ISSN 097-3799**).
2. **Vinod Kumar** and Chopra, A.K. (2009). Impact of Climate Change on Biodiversity of India with special Reference to Himalayan region-An Overview. *Journal of Applied and Natural Science*, 1(1): 117-122 (**ISSN: Print: 0974-9411; Online: 2231-5209; NAAS Rating 5.08**).
3. **Vinod Kumar**, Chopra, A.K., Chakresh Pathak and Sachin Pathak (2010). Agro-potentiality of Paper Mill Effluent on the characteristics of *Trigonella foenum-graecum* L. (Fenugreek) *New York Science Journal*, 3(5): 68-77 (**ISSN: Print: 1554-0200**).
4. **Vinod Kumar** and Chopra, A.K. (2010). Influence of sugar mill effluent on physico-chemical characteristics of soil at Haridwar (Uttarakhand), India. *Journal of Applied and Natural Science*, 2(2): 269-279 (**ISSN: Print: 0974-9411; Online: 2231-5209; NAAS Rating 5.08**).
5. Chakresh Pathak, A.K. Chopra, **Vinod Kumar** and Sachin Srivastava (2010). Heavy metals contamination in wastewater irrigated agricultural soil near Bindal River, Dehradun, India. *Pollution Research*, 29 (4): 33-37 (**ISSN: 0257-8050**).
6. Chakresh Pathak, Chopra, A. K., **Vinod Kumar** and Sunil Sharma (2011). Effect of sewage-water irrigation on physico-chemical parameters with special reference to heavy metals in agricultural soil of Haridwar city. *Journal of Applied and Natural Science*, 3 (1): 108-113 (**ISSN: Print: 0974-9411; Online: 2231-5209; NAAS Rating 5.08**).
7. **Vinod Kumar** and Chopra, A.K. (2011). Impact on physico-chemical characteristics of soil after irrigation with distillery effluent. *Archives of Applied Science Research*, 3(4):63-77 (**ISSN 0975-508X**).
8. A.K. Chopra, Sachin Srivastava and **Vinod Kumar** (2011). Comparative study on agro-potentiality of Paper mill effluent and synthetic nutrient (DAP) on *Vigna unguiculata* L. (Walp) Cowpea. *Journal of Chemical and Pharmaceutical Research*, 3(5):151-165. (**ISSN 0975-7384**).
9. Chopra, A.K., Arun Kumar Sharma and **Vinod Kumar** (2011). Overview of Electrolytic treatment: An alternative technology for purification of wastewater. *Archives of Applied Science Research*, 3(5): 191-206 (**ISSN 0975-508X**).
10. **Vinod Kumar** and Chopra, A.K. (2011). Alterations in physico-chemical characteristics of soil after irrigation with paper mill effluent. *Journal of Chemical and Pharmaceutical Research*, 3(6):7-22 (**ISSN 0975-7384**).
11. **Vinod Kumar** and Chopra, A.K. (2012). Fertilization effect of distillery effluent on agronomical practices of *Trigonella foenum-graecum* L. (Fenugreek). *Environmental Monitoring and Assessment*, 184:1207-1219 (DOI 10.1007/s10661-011-2033-7) (**ISSN: Print: 0167-6369;**

Online: 1573-2959; Impact factor- 1.436).

- 12. Vinod Kumar** and Chopra, A.K. (2012). Monitoring of physico-chemical and microbiological characteristics of municipal wastewater at treatment plant, Haridwar (Uttarakhand) India. *Journal of Environmental Science and Technology*, 5(2):109-118 (DOI: 10.3923/jest.2012.109.118) (ISSN 1994-7887).
- 13. Vinod Kumar** and Chopra, A.K. (2012). Effect of paper mill effluent irrigation on agronomical characteristics of *Vigna radiata* (L.) in two different seasons. *Communications in Soil Science and Plant Analysis*, 43(16):2142-2166. DOI: 10.1080/00103624.2012.697236 (ISSN: Print: 0010-3624; Online: 1532-2416; Impact factor- 0.432).
- 14. Vinod Kumar** and Chopra, A.K. (2012). Effects of Textile Effluents Disposal on water quality of Sub Canal of Upper Ganga Canal at Haridwar (Uttarakhand), India. *Journal of Chemical and Pharmaceutical Research*, 4(9):4206-4211 (ISSN 0975-7384).
- 15. Vinod Kumar** and Chopra, A.K. (2012). Hydrological characteristics of abandoned Old Ganga Canal at Haridwar (Uttarakhand) India. *Journal of Chemical and Pharmaceutical Research*, 4(11):4774-4782 (ISSN 0975-7384).
- 16. Vinod Kumar**, Chopra, A.K. and Sachin Srivastava (2012). Effect of sugar mill effluent irrigation on soil characteristics, germination, vegetative growth and yield of *Vicia faba* (L.). *Journal of Sustainable Environmental Research*, 1(2):221-227. (ISSN 2278-196X).
- 17. Vinod Kumar** and Chopra, A.K. (2012). Translocation of micronutrients in French bean (*Phaseolus vulgaris* L.) grown on soil amended with paper mill sludge. *Journal of Chemical and Pharmaceutical Research*, 4(11):4822-4829. (ISSN 0975-7384).
- 18. Vinod Kumar**, Chopra, A.K. and Sachin Srivastava (2013). Assessment of metals in vegetables irrigated with biomethnated textile effluent at Haridwar (Uttarakhand), India. *Asian Journal of Plant Science & Research*, 3(1): 120-128. (ISSN 2249 – 7412).
- 19. Vinod Kumar** and Chopra, A.K. (2013). Ferti-irrigational effect of paper mill effluent on agronomical characteristics of *Abelmoschus esculentus* L. (Okra). *Pakistan Journal of Biological Sciences*, 16 (22): 1426-1437. (Online ISSN: 1028-8880, Scopus Indexed)
- 20. Chopra, A.K., Sachin Srivastava, Vinod Kumar** and Chakresh Pathak (2013). Agro-potentiality of distillery effluent on soil and agronomical characteristics of *Abelmoschus esculentus* L. (Okra). *Environmental Monitoring and Assessment*, 185: 6635-6644. (DOI 10.1007/s10661-012-3052-8) (ISSN: Print: 0167-6369; Online: 1573-2959; Impact factor- 1.436).
- 21. Vinod Kumar** and Chopra, A.K. (2013). Response of sweet sorghum after fertigation with sugar mill effluent in two seasons. *Sugar Tech*, 15 (3): 285-299 DOI 10.1007/s12355-013-0226-9 (ISSN: Print: 0972-1525; Online: 0974-0740; Impact factor- 0.496).
- 22. Vinod Kumar** and Chopra, A.K. (2013). Enrichment and translocation of heavy metals in soil and *Vicia faba* L. (Faba bean) after fertigation with distillery effluent. *International Journal of Agricultural Policy and Research*, 1(5): 131-141. (E-ISSN 2350-1561; Impact factor- 1.26).

- 23. Vinod Kumar** and Chopra, A.K. (2013). Distribution, enrichment and accumulation of heavy metals in soil and *Trigonella foenum-graecum* L. (Fenugreek) after fertigation with paper mill effluent, *Open Journal of Metals*, 3: 8-20. doi:10.4236/ojmetal.2013.32A1002. (ISSN Print: 2164-2761; Online: 2164-277X; Impact factor- 0.20).
- 24. Vinod Kumar** and Chopra, A.K. (2013). The effects of sugar mill effluent on hybrid cultivar of faba bean (*Vicia faba* L.) and soil properties. *International Journal of Biotechnology Research*, 1(6): 91-102. (E-ISSN 2328-3505; Impact factor-0.76).
- 25. Vinod Kumar** and Chopra, A.K. (2013). Response of high yield variety of Mung bean (*Vigna radiata* L.) after fertigation with distillery effluent in two seasons. *International Journal of Biotechnology Research*, 1(7): 111-125. (E-ISSN 2328-3505; Impact factor-0.76).
- 26. Vinod Kumar** and Chopra, A.K. (2013). Reduction of weeds and improvement of soil quality and yield of wheat by tillage in Northern Great Plains of Ganga River in India. *International Journal of Agricultural Science Research*, 2(8): 249-257. (E-ISSN 2327-3321; Impact factor-0.58).
- 27. Vinod Kumar** and Chopra, A.K. (2013). Accumulation and translocation of metals in soil and different parts of French bean (*Phaseolus vulgaris* L.) Amended with sewage sludge. *Bulletin of Environmental Contamination and Toxicology*, 92 (1): 103-108. DOI: 10.1007/s00128-013-1142-0 (ISSN: Print 0007-4861; Online: 1432-0800; Impact factor: 1.105).
- 28. Vinod Kumar** and Chopra, A.K. (2014). Response of French bean to fertigation with wine from molasses distillery effluent in two seasons. *International Journal of Vegetable Science*, 20 (2): 104-123. DOI: 10.1080/19315260.2012.749970 (ISSN: Print 1931-5260; Online: 1931-5279).
- 29. Vinod Kumar** and Chopra, A.K. (2014). Fertigational impact of sugar mill effluent on agronomical practices of Mung bean (*Vigna radiata* L.) in two seasons. *International Journal of Agricultural Science Research*, 3(4): 052-068. (E-ISSN 2327-3321; Impact factor-0.58).
- 30. Vinod Kumar** and Chopra, A.K. (2014). Toxic element contamination in soil and spinach (*Spinacia oleracea* L.) after fertigation with sugar mill effluent. *International Research Journal of Public and Environmental Health*, 1(4): 95-109. (E-ISSN 2360-8803).
- 31. Vinod Kumar** and Chopra, A.K. (2014). Fertigational effects of sugar mill effluent on agronomical characteristics of high yield cultivar of sugarcane (*Saccharum officinarum* L.) in two Seasons. *Acta Advances in Agriculture Sciences*, 2(9): 17-39 (ISSN: 2345-6817 Online).
- 32. Vinod Kumar** and Chopra, A.K. (2014). Ferti-irrigation effect of paper mill effluent on agronomical practices of *Phaseolus vulgaris* (L.) in two different seasons. *Communications in Soil Science and Plant Analysis*, 45:2151-217 (ISSN: Print: 0010-3624; Online: 1532-2416; Impact factor- 0.432).
- 33. Vinod Kumar** and Chopra, A.K. (2014). Ferti-irrigational impact of sugar mill effluent on agronomical characteristics of *Phaseolus vulgaris* (L.) in two seasons. *Environmental Monitoring and Assessment*, 186:7877-7892. DOI 10.1007/s10661-014-3974-4 (ISSN: Print: 0167-6369; Online: 1573-2959; Impact factor- 1.436).

- 34. Vinod Kumar** and Chopra, A.K. (2014). Pearl millet (*Pennisetum Glaucum* L.) response after ferti-Irrigation with sugar mill effluent in two seasons. *International Journal of Recycling of Organic Waste in Agriculture*, 67: DOI: 10.1007/s40093-014-0067-x (**E-ISSN 2251-7715**).
- 35. Vinod Kumar** (2014). Sugar mill effluent utilization in the cultivation of maize (*Zea mays* L.) in two seasons. *Journal of Waste Management*, <http://dx.doi.org/10.1155/2014/408509> (**Open access Online Hindawi Journal**).
- 36. Vinod Kumar** (2014). Fertigation response of *Abelmoschus esculentus* L. (Okra) with sugar mill effluent in two different seasons. *International Journal of Agricultural Science Research*, 3(9): 164-180. (**E-ISSN 2327-3321; Impact factor-0.58**).
- 37. Vinod Kumar** and Chopra, A.K. (2014). Ferti-irrigational response of hybrid cultivar of Indian mustard (*Brassica juncea* L.) to distillery effluent in two seasons. *Analytical Chemistry Letters*, 4(3): 190-206, DOI: 10.1080/22297928.2014.969616 (**ISSN: Print 2229-7928; Online: 2230-7532**).
- 38. Vinod Kumar**, Chopra, A.K. and Srivastava S. (2014). Distribution, enrichment and accumulation of heavy metals in soil and *Vigna mungo* L. Hepper (Black gram) after irrigation with distillery wastewater. *Journal of Environment and Health Sciences*, 1(1): 1-8. (**ISSN: Online 2378-6841**).
- 39. Tushar Arora**, Anand Mishra, Gagan Matta, A. K. Chopra, Ajendra Kumar, D. R. Khanna and **Vinod Kumar** (2014). Human health risk assessment of temporal and spatial variations of ground water quality at a densely industrialized commercial complex at Haridwar, India. *Journal of Applied and Natural Science*, 6 (2): 825 – 843. (**ISSN: Print: 0974-9411; Online: 2231-5209; NAAS Rating 5.08**).
- 40. Vinod Kumar** and Chopra, A.K. (2015). Fertigation with agro-residue based paper mill effluent on a high yield spinach variety. *International Journal of Vegetable Science*, 21(1): 69-97, DOI: 10.1080/19315260.2013.825690 (**ISSN: Print 1931-5260; Online: 1931-5279**).
- 41. Vinod Kumar**, Sanjay Kumar, Navneet, Tiwari, M.M. (2015). Assessment of mineral elements composition of medicinal plants used in yagya (Agnihotra). *Advances in Biological Research*, 9(3): 189-195, DOI: 10.5829/idosi.abr.2015.9.3.93242 (**ISSN: Online 1992-0067**).
- 42. Srivastava, S.**, Chopra, A.K., **Vinod Kumar** and Sehgal, D. (2015). Agro fertigation response of sugar mill effluent and synthetic fertilizer (DAP) on the agronomy of crop *Vigna unguiculata* L. Walp in two seasons. *Research Journal of Agricultural and Environmental Science*, 2(3): 5-17. (**ISSN: Online 2394-0638**).
- 43. Vinod Kumar**, A.K. Chopra, Sandeep Kumar, Jogendra Singh and Roushan K. Thakur (2015). Effects of pulp and paper mill effluent disposal on soil characteristics in the vicinity of Uttaranchal Pulp and Paper Mill, Haridwar (Uttarakhand), India. *International Journal of Agricultural Science Research*, 4(6): 117-125. (**E-ISSN 2327-3321; Impact factor-0.58**).
- 44. Vinod Kumar** (2015). Carbon sequestration through reforestation: An effective measure to mitigate the climate change. *Journal of Environment and Health Sciences*, 1(3): 1-2. DOI

10.15436/2378-6841.15.e003 (ISSN: Online 2378-6841).

45. **Vinod Kumar** and A.K. Chopra (2015). Toxicity of chromium in agricultural crops with respect to its chemical speciation- A review. *World Applied Sciences Journal*, 33(6): 944-969. DOI: 10.5829/idosi.wasj.2015.33.06.9533 (ISSN: Online 1818-4952).
46. **Vinod Kumar** (2015). A review on efficacy of biopesticides to control the agricultural insect's pest. *International Journal of Agricultural Science Research*, 4(9): 168-179. (E-ISSN 2327-3321; Impact factor-0.58).
47. **Vinod Kumar**, A.K. Chopra, Srivastava S. and Chauhan, R.K. (2015). Accumulation of heavy metals in vegetables grown in wastewater irrigated soil in Haridwar (Uttarakhand), India. *Agricultural Science Research Journal*, 5(11): 146 -152. (ISSN: Online: 2026-6073; Impact factor- 0.325).
48. **Vinod Kumar** (2015). Effects of treated sugar mill effluent irrigation on soil and hybrid cultivar of eggplant (*Solanum melongena* L.) under field conditions. *Journal of Environment and Health Sciences*, 1(4): 1-11, DOI: 10.15436/2378-6841.15.021 (ISSN: Online 2378-6841).
49. **Vinod Kumar** and A.K. Chopra (2015). Heavy metals accumulation in soil and agricultural crops grown in the Province of Asahi India Glass Ltd., Haridwar (Uttarakhand), India. *Advances in Crop Science and Technology*, 4: 203. doi:10.4172/2329-8863.1000203. (ISSN: Online 2329-8863; Impact factor- 1.10).
50. **Vinod Kumar**, Chopra, A.K. and Srivastava S. (2016). Assessment of heavy metals in spinach (*Spinacia oleracea* L.) grown in sewage sludge amended soil. *Communications in Soil Science and Plant Analysis*, 47(2): 221-236. DOI: 10.1080/00103624.2015.1122799 (ISSN: Print: 0010-3624; Online: 1532-2416; Impact factor- 0.432).
51. **Vinod Kumar** and A.K. Chopra (2016). Reduction of pollution load of paper mill effluent by phytoremediation technique using water caltrop (*Trapa natans* L.). *Cogent Environmental Science*, 2: 1153216 DOI: <http://dx.doi.org/10.1080/23311843.2016.1153216>. (ISSN: 2331-1843 Online).
52. **Vinod Kumar** and A.K. Chopra (2016). Agronomical performance of high yielding cultivar of eggplant (*Solanum melongena* L.) grown in sewage sludge amended soil. *Research in Agriculture*, 1(1): 1-24. (ISSN: Print: 2740-4431; Online: 2740-444X).
53. Kumar, S., Navneet, Gautam, S.S. and **Vinod Kumar** (2016) Preliminary phytochemical screening and antimicrobial activity of *Salvadora persica* Linn. extracts against oral pathogens. *Fungal Genomics and Biology*, 7: 131. doi:10.4172/2165-8056.1000131 (ISSN: 2165-8056 Online).
54. **Vinod Kumar** and A.K. Chopra (2016). Effects of sugarcane pressmud on agronomical characteristics of eggplant (*Solanum melongena* L.) under field conditions. *International Journal of Recycling of Organic Waste in Agriculture*, 5: 149-162, DOI 10.1007/s40093-016-0125-7 (E-ISSN 2251-7715).
55. **Vinod Kumar**, Prabhav Gautam, Jogendra Singh and Roushan K. Thakur (2016). Assessment of

phycoremediation efficiency of *Spirogyra Sp.* using sugar mill effluent. *International Journal of Environment, Agriculture and Biotechnology*, 1(1): 54-62. **(Online ISSN: 2456-1878; Impact factor 1.18).**

56. Vinod Kumar, Roushan K. Thakur, Jogendra Singh and Rajneesh Singh (2016). Effect of sewage effluent disposal on soil characteristics at Haridwar (Uttarakhand), India. *World Rural Observations*, 8(2): 40-45. **(ISSN: 1944-6543 Print; 1944-6551 Online).**

57. Vinod Kumar and A.K. Chopra (2016). Influence of summer tillage on soil characteristics, weeds diversity and crop yield of certain vegetable crops grown in Tarai region of Ganga River, India. *International Journal of Agricultural Science Research*, 5(3): 040-050. **(E-ISSN 2327-3321; Impact factor-0.58).**

58. Vinod Kumar (2016). Use of integrated nutrient management to enhance soil fertility and crop yield of hybrid cultivar of brinjal (*Solanum melongena* L.) under field conditions. *Advances in Plants & Agriculture Research*, 4(2): 00130. DOI: 10.15406/apar.2016.04.00130 **(Online ISSN: 2373-6402).**

59. Vinod Kumar, Jogendra Singh, Roushan K. Thakur and Rohit Kumar (2016). Hydrobiological characteristics of pond water at Jamalpur Kalan, Haridwar (Uttarakhand), India. *Journal of Environmental Science, Computer Science, and Engineering & Technology*, 5(3): 546-557 **(Online ISSN: 2278-179X).**

60. Vinod Kumar, Chopra, A.K., Srivastava, S., Tomar, V., Thakur, R.K. and Singh, J. (2016). Impact of Glass industry effluent disposal on soil characteristics in Haridwar region, India. *Journal of Environment and Health Sciences*, 2(2): 1-10 DOI: 10.15436/2378-6841.16.923 **(ISSN: Online 2378-6841).**

61. Vinod Kumar (2016). Agronomical response of high yield cultivar of fenugreek (*Trigonella foenum-graecum* L.) after irrigation with treated sugar mill effluent under nursery polybags trials. *EC Agriculture*, 3(4): 708-718.

62. Vinod Kumar, A.K. Chopra, Jogendra Singh, Roushan K. Thakur, Sachin Srivastava, R.K. Chauhan (2016). Comparative assessment of phytoremediation feasibility of water caltrop (*Trapa natans* L.) and water hyacinth (*Eichhornia crassipes* Solms.) using pulp and paper mill effluent. *Archives of Agriculture and Environmental Science*, 1(1): 13-21. **(Online ISSN: 2456-6632).**

63. Vinod Kumar, Chopra, A.K., Srivastava, S., Singh, J. and Thakur, R.K. (2017). Irrigating okra with secondary treated municipal wastewater: Observations regarding plant growth and soil characteristics. *International Journal of Phytoremediation*, 19 (5): 490-499 DOI: 10.1080/15226514.2016.1244169 **(ISSN: Print: 1522-6514; Online: 1549-7879; Impact factor- 2.085).**

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<http://dx.doi.org/10.1080/00103624.2016.1254788>; (ISSN: Print: 0010-3624; Online: 1532-2416; Impact factor- 0.432).

65. **Vinod Kumar** and A.K. Chopra (2017). Phytoremediation potential of water caltrop (*Trapa natans* L.) using municipal wastewater of activated sludge process based municipal wastewater treatment plant. *Environmental Technology*, <http://dx.doi.org/10.1080/09593330.2017.1293165> (ISSN: Print: 0959-3330; Online: 1479-487X; Impact factor- 1.760).
66. **Vinod Kumar** (2017). A review on the feasibility of electrolytic treatment of wastewater: Prospective and constraints. *Archives of Agriculture and Environmental Science*, 2(1): 65-81 (Online ISSN: 2456-6632; Indexed).
67. Arora, T., Mishra, A., Matta, G., Chopra, A.K., Kumar, A. Khanna, D.R., and **Vinod Kumar** (2017). Pollution load assessment and potential environmental risks of composite industrial effluents discharged from SIDCUL Integrated Industrial Estate, Haridwar (Uttarakhand), India. *Journal of Environmental Biology*, 38: 205-216. ISSN: Print: 0254-8704; online: 2394-0379; NAAS rating 6.55; ISI Impact factor- 0.56).
68. **Vinod Kumar**, Srivastava, S. Chauhan, R.K., Thakur, R.K. and Singh, J. (2017). Heavy metals and microbial contamination of certain leafy vegetables grown in abattoir effluent disposal province of Saharanpur (Uttar Pradesh), India. *Archives of Agriculture and Environmental Science*, 2(1): 36-43 (Online ISSN: 2456-6632; Indexed).
69. Chopra, A.K., Temin Payum, Srivastava, S. and **Vinod Kumar** (2017). Effects of integrated nutrient management on agronomical attributes of tomato (*Lycopersicon esculentum* L.) under field conditions. *Archives of Agriculture and Environmental Science*, 2(2): 86-91 (Online ISSN: 2456-6632; Indexed).
70. **Vinod Kumar** and Roushan K. Thakur (2017). Pollution load of SIDCUL effluent with reference to heavy metals accumulated in sediments using pollution load index (PLI) and geoaccumulation index (I-Geo) at Haridwar (Uttarakhand), India. *Journal of Environment and Biosciences*, 31(1): 163-168 (Online ISSN: 0973-3384).
71. **Vinod Kumar**, Jogendra Singh and Chopra, A.K. (2017). Assessment of phyto-kinetic removal of pollutants of paper mill effluent using water hyacinth (*Eichhornia crassipes* [Mart.] Solms). *Environmental Technology*, <http://dx.doi.org/10.1080/09593330.2017.1365944> (ISSN: Print: 0959-3330; Online: 1479-487X; Impact factor- 1.760).
72. **Vinod Kumar**, Singh, J., Pathak, V.V., Ahmad, S. and Kothari, R. (2017). Experimental and kinetics study for phytoremediation of sugar mill effluent using water lettuce (*Pistia stratiotes* L.) and its end use for biogas production. *J Biotech*, DOI 10.1007/s13205-017-0963-7 (ISSN: Print: 2190-572X; Online: 2190-5738; Impact factor- 1.361).
73. **Vinod Kumar**, Jogendra Singh and Chopra, A.K. (2017). Assessment of plant growth attributes, bioaccumulation, enrichment and translocation of heavy metals in water lettuce (*Pistia stratiotes* L.) grown in sugar mill effluent. *International Journal of Phytoremediation*, 20(5): 507-521,

DOI:10.1080/15226514.2017.1393391 (ISSN: Print: 1522-6514; Online: 1549-7879; Impact factor- 1.770).

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75. Kumar, A., Thakur, R.K., Singh, J., Chopra, A.K. and **Vinod Kumar** (2017). Phyto-adsorption treatment of paper mill effluent using leaf powder of water hyacinth (*Eichhornia crassipes* [Mart.] Solms. *Archives of Agriculture and Environmental Science*, 2(4): 348-352, DOI: 10.26832/24566632.2017.020418 (Online ISSN: 2456-6632; Indexed).
76. **Vinod Kumar**, Kumar, S., Srivastava, S., Singh, J. and Kumar, P. (2018). Water quality of River Ganga with reference to physico-chemical and microbiological characteristics during Kanwar Mela 2017, at Haridwar, India: A case study. *Archives of Agriculture and Environmental Science*, 3(1): 58-63, DOI: 10.26832/24566632.2018.030108 (Online ISSN: 2456-6632; Indexed).
77. **Vinod Kumar**, and Thakur, R.K. (2018). Health risk assessment of heavy metals via dietary intake of vegetables grown in wastewater irrigated areas of Jagjeetpur, Haridwar India. *Archives of Agriculture and Environmental Science*, 3(1): 73-80, DOI: 10.26832/24566632.2018.0301011 (Online ISSN: 2456-6632; Indexed).
78. **Vinod Kumar** and Thakur, R.K. (2018). Impact of industrial effluents disposal on soil and cabbage grown in district Haridwar (Uttarakhand), India. *International Journal of Current Research in Life Sciences*, 7(4): 1888-1896 (Online ISSN: 2319-9490; Indexed, SJIF: 5.379).
79. **Vinod Kumar**, Singh, J. and Kumar, P. (2018). Response surface methodology based optimization of cadmium and lead remediation from aqueous solution by water hyacinth (*Eichhornia crassipes* [Mart.] Solms) and its anatomical study. *Archives of Agriculture and Environmental Science*, 3(2): 163-173, <https://dx.doi.org/10.26832/24566632.2018.0302010> (Online ISSN: 2456-6632; Indexed).
80. **Vinod Kumar**, Singh, J., Nadeem, M., Kumar, P. and Pathak, V.V. (2018). Experimental and kinetics studies for biogas production using water hyacinth (*Eichhornia crassipes* [Mart.] Solms) and sugar mill effluent. *Waste and Biomass Valorization*, <https://doi.org/10.1007/s12649-018-0412-9> (ISSN: Print: 1877-2641; Online: 1877-265X; Impact factor- 1.874).
81. **Vinod Kumar**, A.K. Chopra and Jogendra Singh (2018). Phytoremediation of secondarily treated sewage effluent of activated sludge process based treatment plant using water hyacinth (*Eichhornia crassipes* Solms.). *International Journal of Phytoremediation*, (Communicated).
82. **Vinod Kumar** (2018). Enrichment and translocation of heavy metals in vegetables grown in composite effluent irrigated soil in the vicinity of Hindon River at Saharanpur (Uttar Pradesh), India. *Communication in Soil Science and Plant Analysis*, (Communicated).
83. **Vinod Kumar**, Jogendra Singh and Chopra, A.K. (2018). Removal of heavy metals and biogas production from biomass of water hyacinth (*Eichhornia crassipes*) grown in paper mill effluent.

Environmental Technology, (Communicated).

- 84.** Response surface methodology based optimization and kinetics studies of BOD and COD removal from sugar mill effluent using water hyacinth (*Eichhornia crassipes* Mart.] Solms). *Environmental Research*, (Communicated).

**Annexure “III”
(Journals/Proceedings/Books chapters)**

1. **Vinod Kumar** and Chopra, A.K. (2008). Bio-environmental Management of Malaria with use of herbal plants. In: Multifacial Application of Drug Plants, Proceeding of National Seminar on Medicinal plants: Conservation, Cultivation and Utilization II, 301-308.
2. **Vinod Kumar** and Chopra, A.K. (2008). Bioterrorism: A New Threat to Humanity and Life supporting System. Bioterrorism and Biological Warfare, Pointer Publisher, Jaipur, 330-37, pp. 368.
3. **Vinod Kumar**, A.K. Chopra (2013). Contamination of heavy metals in vegetables irrigated with textile effluent at Haridwar (Uttarakhand). Climate Change Effects on Agriculture and Economy, Biotech Books, New Delhi, 73-80.
4. **Vinod Kumar**, A. K. Chopra, Roushan K. Thakur and Jogendra Singh(2018). Contamination of Heavy Metals in Agricultural Soils: Sources, Ecological Consequences, and Remediation Measures. Contamination in Soil Environment, (Accepted)

**Annexure “IV”
(Books Authored/Edited)**

1. **Vinod Kumar** (2018). A Handbook of Aquatic Biology, Agro-Environ Media, Agriculture and Environmental Science Academy, Haridwar (Uttarakhand), pp. 58.

Annexure "V"
(Seminars/ Conferences/Workshops attended/participated)

1. Actively participated in IInd National Seminar on Medicinal plants: Conservation, Cultivation and Utilization, 9th-11th March, 2007 held at the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand).
2. Participated in Poster presentation in National Environmental Awareness Workshop on "Solid Waste Management" 10th April, 2007 held at the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand).
3. Participated in Poster presentation in IInd Uttarakhand Science Congress-15th-17th November, 2007 held at Uttarakhand Academy of Administration, Nainital (Uttarakhand).
4. Participated in Workshop on Molecular and Applied Microbiology, 10th-19th February, 2008 held at the Department of Botany and Microbiology, Gurukula Kangri University, Haridwar (Uttarakhand).
5. Participated in oral presentation in IIIrd J&K Science Congress-26th 28th February, 2008 held at University of Jammu, Jammu (J&K).
6. Actively participated in national workshop on Techniques in water and waste water treatment, 25th-26th March, 2008 held at the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand).
7. Participated in oral presentation in IIIrd Uttarakhand Science Congress-10th and 11th November, 2008 held at IIT Roorkee, Roorkee, Haridwar (Uttarakhand).
8. Participated in oral presentation in National seminar on "Managing Climate Change: Molecules to Communities", March 21-22, 2009 held at the Department of Zoology Kurukshetra University, Kurukshetra (Haryana).
9. Actively participated in National seminar on "Environmental Management and Biodiversity Conservation", February 26-27, 2011 held at the Omkarananda Institute of Management and Technology, Rishikesh, Dehradun (Uttarakhand).
10. Participated in oral presentation in National seminar on "Innovations and Applications in Engineering and Applied Sciences", November 9-10, 2011 held at the Faculty of Engineering and Technology, Gurukula Kangri University, Haridwar (Uttarakhand).
11. Participated in oral presentation in International conference on "Global Innovations, Strategies & Policies in Physical Education & Sports Sciences", February 24-26, 2012 held at Department of Physical Education, Gurukula Kangri University, Haridwar (Uttarakhand).
12. Attended 18th Orientation Programme at Academic Staff College, Kumaun University, Nainital, Uttarakhand", from April 3, 2012 to April 30, 2012.
13. Actively participated in national workshop on "Taxonomic keys and identification tools of different groups of flora and fauna", 29th October, 2012 to 3rd November, 2012 held at the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand).

14. Participated in oral presentation in 2nd International Science Congress (ISC-2012) on "Science and Technology- Challenges of 21st Century", on 8th December, 2012 to 9th December, 2012 held at Bon Maharaj Engineering College, Vrindavan, Mathura (Uttar Pradesh).
15. Participated in oral presentation in National conference on Emerging Trends in Engineering and Sciences on 9th to 10th November, 2013 at Faculty of Engineering and Technology, Gurukula Kangri University, Haridwar (Uttarakhand).
16. Participated in oral presentation in 8th Uttarakhand State Science & Technology Congress-2013 on 26th - 28th December, 2013 held at Doon University, Dehradun, (Uttarakhand).
17. Actively participated and presented a research paper in National seminar on "Economic Upgradation: Environmental Degradation" on January 24-25, 2014 held at Omkarananda Institute of Management and Technology, Rishikesh, Dehradun (Uttarakhand).
18. Attended 19th Refresher Course in the subject of Environmental Science at Academic Staff College, Jawaharlal Nehru University, New Delhi", from February 10, 2014 to March 7, 2014.
19. Presented a research paper in 5th National conference on "Present Innovative Approaches & New Paradigm in Physical Education" on August 29, 2014 organized by Department of Physical Education, Gurukula Kangri University, Haridwar (Uttarakhand).
20. Presented a research paper in Regional Symposium on Technovations for Inclusive Human Development on October 12, 2014 organized by Faculty of Engineering & Technology, Gurukula Kangri University, Haridwar (Uttarakhand).
21. Actively participated in workshop on "Isolation & Characterization of Fungi", 8th November, 2014 held at the Department of Botany and Microbiology, Gurukula Kangri University, Haridwar (Uttarakhand).
22. Actively participated and presented a research paper in National Seminar on Threats to Biodiversity and Ecosystems: Impacts of Developmental Projects and Climate Change and 25th All India Congress of Zoology from 17-19th November, 2014 organized by Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand).
23. Actively participated and presented a research paper in National Conference on Science & Technology for Human Development from 20-21st March, 2015 organized by The Indian Science Congress Association: Haridwar Chapter and Department of Ancient Indian History, Culture & Archaeology, Gurukula Kangri University, Haridwar (Uttarakhand).
24. Actively participated and presented a research paper in National Seminar on Yogic Management of Life Style Disorders from 30-31st March, 2015 organized by Department of Human Consciousness & Yogic Science, Gurukula Kangri University, Haridwar (Uttarakhand).
25. Actively participated and presented a research paper in National Conference on Science & Technology for Indigenous Development in India from September 28-30, 2015 organized by the Indian Science Congress Association: Haridwar Chapter and Faculty of Engineering & Technology, Gurukula Kangri University, Haridwar (Uttarakhand).
26. Actively participated and presented a research paper in International conference on Advances in Science,

Engineering & Technology organized by International Council for Man and Nature (MANU) and International Journal of Advance Research and Innovation on 29-30 January, 2016 at Hotel Urmi, Haridwar (Uttarakhand).

27. Actively participated in one day workshop on Patent Drafting, Filing and Processing on 14th November, 2016 organized by Intellectual Property Right Cell & Faculty of Medical Science & Health, Gurukula Kangri University, Haridwar (Uttarakhand).
28. Actively participated and presented a research paper in National Conference on Sustainable Development and Climate Change on 18th November, 2016 organized by Department of Environmental Science, Amity University, Gwalior (Madhya Pradesh).
29. Actively participated and presented a research paper in 7th National Conference on Science & Technology for National Development from 20-22nd November, 2016 organized by the Indian Science Congress Association: Haridwar Chapter and Department of Chemistry, Gurukula Kangri University, Haridwar (Uttarakhand).
30. Actively participated and presented a research paper in National Conference on Recent Trends in Green Chemistry and Sustainability from March 22-23, 2017, organized by Department of Environment and Chemistry, Graphic Era University, Dehradun (Uttarakhand).
31. Attended Saksham-IT Champion Training Program organized by Microsoft and Faculty of Education, Gurukula Kangri University, Haridwar Uttarakhand from 22-23 September, 2017.
32. Actively participated and presented a research paper in National Conference on Agricultural Sustainability by Cultivation of Medicinal & Aromatic Plants organized by University of Petroleum and Energy Studies, Dehradun on 18 March, 2017.
33. Actively participated and presented a research paper in International Conference on Sustainable Initiatives in Water Management organized by Department of Chemistry, Manav Rachna University, Faridabad and Green Chemistry Network Centre, Delhi University, Delhi on 6 March, 2018.
34. Actively participated and presented a research paper in National Seminar on Researches in Environment and Biosciences: Current Scenario and Future Perspectives organized by Department of Zoology, D.A.V. (P.G.) College, Dehradun (Uttarakhand) on 22-23 June, 2018.

**Annexure “VI”
(Conference/Symposia/Workshop organized)**

1. Worked as Joint Organizing Secretary in the World Congress for Man and Nature: Global Climate Change and Biodiversity Conservation organized by Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand) on 11th to 13th November, 2011.
2. Worked as member of Organizing Committee of the National Seminar on Threats to Biodiversity and Ecosystems: Impacts of Developmental Projects and Climate Change & 25th All India Congress of Zoology organized by Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand) on 17th to 19th November, 2014.
3. Worked as member of organizing committee of International conference on Advances in Science, Engineering & Technology organized by International Council for Man and Nature (MANU) and International Journal of Advance Research and Innovation on 29-30 January, 2016 at Hotel Urmi, Haridwar (Uttarakhand).
4. Organized one day Awareness Workshop on Fireworks: Ill effects and Health Hazards in the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand) on 27th February, 2016.
5. Worked as member of Organizing Committee of the XXVI International Bioacoustics Congress organized by Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand) on 8th to 13th October, 2017.

Annexure "VII"
(Members of Scientific Bodies/Societies)

Members of Scientific Societies

1. As founder member of Applied and Natural Science Foundation, No.1 Professors' Colony, Gurukula Kangri University, Haridwar.
2. As Joint Organizing Secretary member of the World Congress for Man and Nature: Global Climate Change and Biodiversity Conservation held at Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar, on 11th to 13rd November, 2011.
3. Editorial board member of Journal of Applied and Natural Science, published by Applied and Natural Science Foundation, No.1 Professors' Colony, Gurukula Kangri University, Haridwar since the year 2012.
4. As UGC Research Fellow from 18/1/2008 to 14/12/2009 at the Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar.
5. As fellow of Applied and Natural Science Foundation, No.1 Professors' Colony, Gurukula Kangri University, Haridwar since the year 2012.
6. Editorial Board member of International Journal of Plant Physiology and Biochemistry, Academic Journals, Victoria Island, Lagos since the year 2012.
7. Editorial Board member of Journal of Agricultural Science, Canadian Center of Science and Education, 1120 Finch Avenue West Suite 701-309 Toronto, ON., M3J 3H7 Canada since the year 2012.
8. Life member of Journal of Sustainable Environmental Research, published by Foundation of Natural Science and Culture, Gurukula Kangri University, Haridwar (Uttarakhand), India since the year 2012.
9. Life member of the Indian Science Congress Association 14, Dr. Biresh Guha Street, Kolkata- 700 017, India (Membership No. L23448) since the year 2014.
10. Life member of Indian Science Congress Association, Haridwar Chapter, Gurukula Kangri University, Haridwar (Uttarakhand), India since the year 2014.
11. Editorial Board member of International Journal of Agricultural Science and Natural Resources, American Association for Science and Technology, 1521 Concord Pike Suite 301, Wilmington, New Castle De 19803 USA since the year 2014.
12. Awarded Appreciation Certificate for best performance during 25th All India Congress of Zoology held at Department of Zoology and Environmental Science, Gurukula Kangri University, Haridwar (Uttarakhand) from November 17 to November 19, 2014.
13. Editorial Board member of Journal of Environment and Health Sciences published by Ommega Online Journals, 8211, Tamarron Drive, Plainsboro, NJ-USA from October, 2014.
14. Co-coordinator of Eco club of Gurukula Kangri University, Haridwar (Uttarakhand) since the year 2015.
15. Editorial Board member of Journal of Research in Agriculture published by Scholink, Los Angeles since the year 2016.

Annexure “VIII”
(Popular Scientific Articles)

1. **Vinod Kumar**, A K Chopra, Sachin Srivastava, Raaz K. Maheshwari (2013). Uttarakhand: Most Disaster Prone State of India, Need for Effective Management. *The Science Observer*; 1(1): 1-3.
2. **Vinod Kumar** (2015). Carbon sequestration through reforestation: An effective measure to mitigate the climate change. *Journal of Environment and Health Sciences*, 1(3): 1-2. DOI 10.15436/2378-6841.15.e003 (ISSN: Online 2378-6841).

**Annexure “X”
(Invited Lecture /Talk)**

1. Delivered a talk on “Use of Pesticides in Agriculture and their Impacts on Human and Birds” Awareness Drive on Sparrow Conservation and Human Wildlife Conflict organized by Department of Zoology and Environmental Science, Gurukula Kangri Vishwavidyalaya, Haridwar (Uttarakhand) from 17-20 March, 2018.