



Employee Number:16889

CURRICULUM VITAE

Name : **DR. KAVINDRA NATH TIWARI**
Designation : **Professor**

Department : Department of Botany, MMV
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Father's Name : Shri Kashi Nath Tiwari

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ACADEMIC QUALIFICATIONS:

- High School, U. P. Board, Allahabad, 1980, **First Hons.**
- Intermediate, U. P. Board, Allahabad, 1982, **First Division**
- B.Sc. (Hons) Banaras Hindu University, Varanasi, 1985, Botany (Hons), **First Division and First Position**
- M.Sc., Banaras Hindu University, Varanasi, 1988, Botany, **First Division and First Position**
- Ph. D., School of Biotechnology, Banaras Hindu University, Varanasi, 1996.

Research Problem : **Studies on Tissue Culture and Somatic Embryogenesis in Chickpea (*Cicer arietinum* L.)**

RESEARCH INTEREST : Plant Tissue Culture, Phytochemistry of Medicinal Plants and Natural Product Based Drug Development

RESEARCH CONTRIBUTION:

1. Established protocol for somatic embryogenesis in chickpea (*Cicer arietinum* L.).
2. Somatic embryogenesis and *in vitro* regeneration established in several high yielding varieties of wheat (*Triticum aestivum* L.).
3. Mass multiplication protocol for micropropagation of highly valuable Indian medicinal plants e.g., Brahmi (*Bacopa monnieri*), Mandukparni (*Centella asiatica*), Salparni (*Desmodium gangeticum*), Aparajita (*Clitoria terantea*) and Bhui-amla (*Phyllanthus fraternus*) has been established. Micropropagation protocol establishment for several other medicinal plants is underway.
4. Identification of several biological active compounds derived from natural sources active against pathogenic virus and fungal pathogens.

UNITED STATES PATENT : *In vitro* antiviral activity of a plant extract against Herpes Simplex Virus (HSV). University of Illinois at Chicago
Technical Identification Number DB014 filled on 29.8.2007 for U. S. Patent at UIC Office.

SEQUENCE SUBMISSION IN NCBI Genbank: 30 sequences

1. Singh K, Rani J and **Tiwari KN (2011)**. **One** sequence of *Westerdykella sp. kjar* submitted with Accession Number JF937915.
2. Yadav J, Verma JP and **Tiwari KN (2010)**. **Two** sequences of PGPR submitted with Accession Numbers GU646773 and GU646774.
3. Singh K, **Tiwari KN** and Rani J (**2010**). **One** sequence of *Eupenicillium brefeldianum* submitted with Accession Number HQ129858
4. Yadav J, Verma J P and **Tiwari KN (2009)**. **Twenty six** sequences of Plant Growth Promoting Rhizobacteria (PGPR) submitted with Accession Numbers GU124814, GU124815, GU124816, GU124817, GU124818, GU124819, GU124820, GU124821, GU124822, GU124823, GU124824, GU124825, GU124826, GU124827, GU124828, GU124829, GU124830, GU124831, GU124832, GU124833, GU124834, GU124835, GU124836, GU124837, GU124838, GU124839

NATIONAL RECOGNITION:

1. Subject experts in **Commission for Scientific and Technical Terminology (CSTT)**, Ministry of HRD, Government of India, New Delhi, 2007.
2. Member of **NCERT**, New Delhi Review Committee for Biology Class XI Syllabi 2005 and Class XII syllabi 2006 and in task force of Hindi translation Biology books for above classes.
3. Secretary of **Second World Congress on Vedic Sciences** organized by Banaras Hindu University, Varanasi, February 2007.

ACADEMIC AWARDS AND DISTINCTIONS:

- **Malayiya Gold Medal** of Banaras Hindu University, Varanasi for standing **First Position in B.Sc. (Hons)**.
- **B.H.U. Gold Medal** of Banaras Hindu University, Varanasi, for standing **First Position in M.Sc.**
- **C.S.I.R.**, New Delhi Junior Research Fellowship.
- National Merit Scholarship of Government of India.
- Integrated Scholarship of Government of U.P. State.
- Ayodhya Bhanumal Scholarship of Trustee, U. P.
- Qualified Graduate Aptitude Test of Engineering (**GATE**) with percentile score 93.95.
- **UGC**, National Eligibility Test (NET) in Life Sciences.

BOOK PUBLISHED: 04

1. Biodiversity and Sustainable Development, Prasanna Prakashan, Bhopal, **2012**. ISBN: 978-81-905131-0-4
2. Vedavijnanabhasvati, Department of Veda, Banaras Hindu University, Varanasi, **2007**.
3. Biology Class 12th, NCERT, New Delhi (Hindi), **2006**. ISBN: 81-7450-680-2
4. Biology Class 11th, NCERT, New Delhi (Hindi), **2005**. ISBN: 81-7450-509-1

RESERARCH EXPERIENCE: Twenty two Years.

TEACHING EXPERIENCE: Twenty years teaching experience at **Undergraduate** (B.Sc.) and **Postgraduate** (M.Sc.) level.

Ph. D. GUIDANCE: No. of Students awarded Ph. D. degree: **06**
No. of Ph.D. Scholars working: **03**

RESEARCH PROJECTS COMPLETED :

Successfully completed Two Research Projects supported by U. G. C.

ORGANISATION OF SEMINAR/SYMPOSIUM/WORKSHOP:

1. Organized National seminar on **Mahamana's Vision and the Challenges of the Millennium Development Goals, March 2011**, MMV, BHU, Varanasi and involved as **Organizing Secretary**.
2. Organized National symposium on **Environmental Threat to Human Health in 21st Century, January, 2009**, MMV, BHU, Varanasi, and involved as **Joint Organizing Secretary**.
3. Workshop organized on **MEDICINAL PLANTS, 1997** financially supported by Ministry of Environment and Forest, Government of India, New Delhi & EPCO Bhopal and involved as **Organizing Secretary**.

MEMBERSHIP OF PROFESSIONAL SOCIETIES:

1. International Association for Plant Tissue Culture & Biotechnology.

2. Indian Botanical Society.

MEMBER IN EDITORIAL BOARD OF JOURNALS:

1. Member Advisory Board of **Biological Forum-An International Journal** ISSN No: 0975-1130.
2. Member Advisory Board of **Biozone-International Journal of Life Science** ISSN No: 0974-8873.
3. Member in Editorial Board of **Journal on New Biological Reports** ISSN No. 2319-11004 (Online).

PUBLICATIONS

1. Mishra A, Pandey K and **Tiwari KN** (2015). *In vitro* direct plant regeneration from mature cotyledons of *Clitoria ternatea* L. Research Journal of Biotechnology 10: 34-38.
2. Upadhyay R, Kashyap SP, Singh C, **Tiwari KN**, Singh K and Singh M (2014). Ex-situ conservation of *Phyllanthus fraternus* Webster and evaluation of genetic fidelity in regenerates using DNA based molecular marker. Applied Biochemistry and Biotechnology 174:2195-2208.
3. Upadhyay R, Kashyap SP, Singh C, **Tiwari KN**, Singh K and Singh M (2014). Assessment of factors on shoot proliferation potential of nodal explants of *Phyllanthus fraternus* and assessment of genetic fidelity of micropropagated plants using RAPD marker. Biologia 69:1685-1692.
4. Singh S, Lata S and **Tiwari KN** (2014). Antioxidant potential of *Phyllanthus fraternus* on cyclophosphamide induced changes in sperm characteristics and testicular oxidative damage in mice. Indian Journal of Experimental Biology (**In Press**).
5. Upadhyay R, Chaurasia JK, **Tiwari KN** and Singh K (2014). Evaluation of antioxidant property of whole plant extracts of *Phyllanthus fraternus* Webster - a potent pharmaceutical agent. Research Journal of Chemistry and Environment (**In Press**).
6. Lata S, Singh S and **Tiwari KN** and Upadhyay R (2014). Evaluation of the antioxidant and hepatoprotective effect of *Phyllanthus fraternus* Webster against a chemotherapeutic drug cyclophosphamide. Applied Biochemistry and Biotechnology. 173:2163–2173.
7. Singh S, Lata S and **Tiwari KN** (2014). *Aegle marmelos* leaves protect liver against toxic effects of cyclophosphamide in mice. New York Science Journal 7:43-53.
8. Verma JP, Yadav J, **Tiwari KN** and Jaiswal DK (2014). Evaluation of plant growth promoting activities of microbial strains and their effect on 1growth and yield of chickpea (*Cicer arietinum* L.) in India. Soil Biology and Biochemistry 70:33-37.
9. Srivastava P, Singh BD and **Tiwari KN** (2014). Comparative *in vitro* regeneration study of mature and juvenile nodal explants of an endangered medicinal plant *Desmodium gangeticum* (L.) DC. Research Journal of Chemistry and Environment 18:1-15.

10. Upadhyay R, Chaurasia JK, **Tiwari KN** and Singh K (2014). Antioxidant property of aerial parts and root of *Phyllanthus fraternus* Webster-An important medicinal plant. The Scientific World Journal 2014:1-8. doi.org/10.1155/2014/692392.
11. Singh S, Lata S and **Tiwari KN** (2014).The protective role of *Phyllanthus fraternus* Webster (Bhuiamla) against cyclophosphamide induced nephrotoxicity in mice. Journal of Scientific Research 58:1-11.
12. Upadhyay R, Chaurasia JK, **Tiwari KN** and Singh K (2013). Comparative antioxidant study of stem and stem induced callus of *Phyllanthus fraternus* Webster-An important antiviral and hepatoprotective plant. Applied Biochemistry and Biotechnology 171:2153-2164.
13. Upadhyay R, **Tiwari KN** and Singh K (2013). High frequency shoots regeneration for mass multiplication of *Phyllanthus fraternus* Webster - An important antiviral and hepatoprotective plant. Applied Biochemistry and Biotechnology 169:2303-2314.
14. Srivastava P, Singh BD and **Tiwari KN** (2013). High frequency *in vitro* multiplication from cotyledonary node explants of an endangered medicinal plant *Desmodium gangeticum* L. (DC). Research Journal of Biotechnology 8:3-10.
15. Verma JP, Yadav J, **Tiwari KN** and Kumar A (2013). Effect of indigenous *Mesorhizobium* spp. and plant growth promoting rhizobacteria on yields and nutrients uptake of chickpea (*Cicer aritenium* L.) under sustainable agriculture. Ecological Engineering 51:282-286.
16. **Tiwari KN**, Tiwari V, Mishra AK, Singh C and Upadhyay R (2013). Germplasm conservation of *Bacopa monnieri* (L.) Wettst. under slow growth conditions by encapsulation of nodal explants. Proceeding of National Conference on Assessment and Conservation of Forest Genetic Resources-Through Biotechnological Interventions (Eds. Singh S and Das R). pp. 226-238, Institute of Forest Productivity, Ranchi.
17. Singh J and **Tiwari KN** (2012). *In vitro* plant regeneration from decapitated embryonic axes of *Clitoria ternatea* L.-An important medicinal plant. Industrial Crops and Products 35:224-229.
18. **Tiwari KN**, Tiwari V, Singh B D, Singh J and Ahuja P (2012). Synergistic effect of trimethoprim and bavistin for *in vitro* mass propagation of *Bacopa monniera* (L.) Wettst. Biologia Plantarum 56:177-180.
19. Verma J, Yadav J and **Tiwari KN** (2012). Enhancement of nodulation and yield of chickpea (*Cicer arietinum* L.) by co-inoculation of indigenous *Mesorhizobium* spp. and plant growth promoting rhizobacteria at eastern Uttar Pradesh. Communication in Soil Science and Plant Analysis 43:605–621.
20. Lata S, Singh S, **Tiwari KN** and Upadhyay R(2012).The hepatoprotective effect of *Phyllanthus fraternus* Webster (Bhuiamla) against cyclophosphamide induced liver injury in mice. In: Traditional Medicine and Globalization-The Future of Ancient Systems of Medicine (Ed. Mukherjee PK), ISBN: 978-81-926243-0-3, pp.525-532, Maven Publishers, Kolkota.

21. **Tiwari KN**, Suman S, Singh J and Kapur P (2012). Somaclonal Variation. In: Plant Tissue Culture: Totipotency to Transgenic (Eds. Sharma HP, Dogra JVV and Misra AN), ISBN: 978 81 7754 467 1, pp. 241-272, Agrobios (India), Jodhpur.
22. **Tiwari KN**, Verma JP and Singh J (2012). Water intoxication by cyanobacteria. In: Microbial Toxins and Toxigenic Microbes (Eds. Pandey V and Singh SK), ISBN: 97 89 380012544, pp. 369-394, Studium Press, Texas, LLC, USA.
23. Yadav J, Verma JP and **Tiwari KN** (2011). Solubilization of tricalcium phosphate by fungus *Aspergillus niger* at different carbon source and salinity. Trends in Applied Sciences Research 6:606-613.
24. Verma JP, Yadav J and **Tiwari KN** (2011). Plant growth promoting activities of fungi and their effect on chickpea plant growth. Asian Journal of Biological Sciences 4:291-299.
25. Yadav J, Verma JP, Rajak VK and **Tiwari KN** (2011). Selection of effective indigenous *Rhizobium* strain for seed inoculation of chickpea (*Cicer aritenium* L.) production. Bacteriology Journal 1:24-30.
26. Yadav J, Verma JP, Yadav SK and **Tiwari KN** (2011). Effect of salt concentration and pH on soil inhabiting fungus *Penicillium citrinum* Thom. for solubilization of insoluble phosphorus to soluble phosphorus. Microbiology Journal 1:25-32.
27. **Tiwari KN**, Upadhyay R and Singh J (2011). Clonally micropropagated medicinal plants can be used as raw materials in herbal ayurvedic formulations. Proceedings of International Conference on Recent Advances in Ayurvedic Pharmaceutics (Ed. Reddy KRC). ISBN 978 93 81361 38 2 pp. 260-261, Department of Rasa Shastra, IMS, BHU, Varanasi.
28. Singh J and **Tiwari KN** (2010). Evaluation of cotyledonary node of *Clitoria ternatea* L. for high frequency *in vitro* axillary shoot proliferation. Asian Journal of Plant Science 9:351-357.
29. Yadav J, Verma JP, **Tiwari KN** (2010). Effect of plant growth promoting rhizobacteria on seed germination and plant growth of chickpea (*Cicer arietinum* L.) under *in vitro* conditions. Biological Forum 2:15-18.
30. Verma JP, Yadav J, **Tiwari KN** (2012). Use of plant growth promoting rhizobacteria as biofertilizers. In: Biodiversity and Sustainable Development (Eds. Tiwari KN and Lata S), ISBN 978 81 905131 0 4, pp. 37-58, Prasanna Prakashan, Bhopal.
31. **Tiwari KN** and Singh J (2012). Germplasm conservation of medicinal and aromatic plants using synthetic seed technology. In: Biodiversity and Sustainable Development (Eds. Tiwari KN and Lata S), ISBN 978 81 905131 0 4, pp. 1-14, Prasanna Prakashan, Bhopal.

32. Singh J and **Tiwari KN** (2010). High-frequency *in vitro* multiplication system for commercial propagation of pharmaceutically important *Clitoria ternatea* L. - a valuable medicinal plant. *Industrial Crops and Products* 32:534-538.
33. Verma JP, Yadav J, **Tiwari KN**, Lavakush and Singh V (2010). Impact of plant growth promoting rhizobacteria on crop production. *International Journal of Agricultural Research* 5:954-983.
34. Verma JP, Yadav J and **Tiwari KN** (2010). Application of *Rhizobium* sp.BHURC01 and plant growth promoting rhizobacteria on nodulation, plant biomass and yields of chickpea (*Cicer arietinum* L.). *International Journal of Agricultural Research* 5:148-56.
35. Pandeya K, **Tiwari KN**, Singh J, Verma JP and Dubey SD (2010). *In vitro* micropropagation of *Clitoria ternatea* L.-A rare medicinal plant. *Journal of Medicinal Plants Research* 4:664-668.
36. **Tiwari KN** and Singh J (2010). Effective organogenesis from different explants of *Bacopa monniera* L. (Wettst.)-An important medicinal plant. *Biological Forum* 2:18-22.
37. Yadav J, Verma JP and **Tiwari KN** (2010). Stimulation of nodulation and plant growth of chickpea by *Pseudomonas aeruginosa* and *Rhizobium leguminosarum*. *Biozone* 2:319-323.
38. Verma JP, Yadav J and **Tiwari KN** (2009). Effect of *Mesorhizobium* and plant growth promoting rhizobacteria on nodulation and yields of chickpea. *Biological Forum* 1:11-4.
39. Ahuja P, Singh BD and **Tiwari KN** (2008). Comparative effect of different cytokinins on shoot regeneration in *Desmodium gangeticum*. *Proceedings of International Society of Biotechnology*. pp. 210-213.
40. Upadhyay A and **Tiwari KN** (2007). Yoga in vedic era. In: Vedavijnanabhasvati (Proceeding of Second World Congress on Vedic Sciences), (Eds. Sharma HR et al.), pp. 252- 253, Department of Veda, BHU, Varanasi
41. Tiwari V, **Tiwari KN** and Singh BD (2006). Shoot bud regeneration form different explants of *Bacopa monnira* (L.) Wettst by trimethoprim and bavistin. *Plant Cell Reports* 25: 629-635.
42. **Tiwari KN** (2006). Biotechnological potential of cyanobacteria. In: *Biotechnological Applications of Cyanobacteria* (Ed. Singh K), ISBN 81 903104 0 2, pp.155-164, Academic World, Bhopal.
43. Shrivastava K, **Tiwari KN**, Singh R, Singh BD and Jaiswal HK (2001). Shoot regeneration from immature cotyledons of *Cicer arietinum*. *Biolgoia Plantarum* 3: 337-342.
44. Tiwari V, **Tiwari KN** and Singh BD (2001). Comparative studies of cytokinins on *in vitro* propagation of *Bacopa monniera* (L.) Wettst. *Plant Cell, Tissue and Organ Culture* 66: 9-16.

45. **Tiwari KN**, Sharma NC, Tiwari V and Singh BD (2000). Micropropagation of *Centella asiatica* (L.) a valuable medicinal herb. *Plant Cell, Tissue and Organ Culture* 63: 179-185.
46. Tiwari V, **Tiwari KN** and Singh BD (2000). Suitability of liquid cultures for *in vitro* multiplication of *Bacopa monniera* (L.) Wettst. *Phytomorphology* 50: 337-342.
47. Tiwari V, Singh BD and **Tiwari KN** (1998). Shoot regeneration and somatic embryogenesis from different explants in Brahmi (*Bacopa monniera* L.) Wettst. *Plant Cell Reports* 17: 538-43.
48. Singh BD, **Tiwari KN**, Srivastava K Singh R and Srivastava DK(1998). Regeneration systems in chickpea and other grain legumes and their possible applications. In: *Genetics and Biotechnology in Crop Improvement* (Eds. Gupta PK, Singh SP, Balyan HS, Sharma PC and Ramesh B), ISBN: 81-7133-319-2, pp. 341-369, Rastogi Publication, Meerut.
49. Arun B, **Tiwari KN**, Singh BD and Dhari R (1994). High frequency somatic embryogenesis in some Indian Wheat (*Triticum aestivum* L.) cultivars. *Indian Journal of Experimental Biology* 32: 835-837.
50. Singh BD and **Tiwari KN** (1994). Somaclonal variation in crop improvement. In: *Crop Breeding in India* (Ed. Singh HG), ISBN 81 85860 06 8, pp. 493-499, International Book Publication, Lucknow.