**Name:** **Dr. Pankaj Kumar Tiwari**

**Designation:** **Scientist**

**Mob:** **+91 97520 14973**

**Email:** pankajkumar2311@gmail.com; pankaj.tiwari@icar.gov.in

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| **Department** | Soil and Water Chemistry — Aquaculture Production and Environment Division |
| **Institute/ University** | ICAR-Central Institute of Freshwater Aquaculture |
| **Address** | Aquaculture Production and Environment Division<br>ICAR-Central Institute of Freshwater Aquaculture<br>Kausalyaganga, Bhubaneswar — 751 002 (Odisha) |
| **Date of Birth** | 23/11/1985 |
| **Sex** | Male |
| **Tel** | |
| **Fax** | |
| **Language known** | English, Hindi, Tamil, Gujarati |

| **Educational Qualifications** | | | |
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| **Degree** | **University/ Institute** | **Discipline** | **Year** |
| **Ph. D.** | Anand Agricultural University, Anand (Gujarat) | Soil Science & Agricultural Chemistry | 2017 |
| | **Title of Ph. D. thesis:** Effect of Zinc Oxide Nanoparticles on Germination, Growth and Yield of Maize (*Zea mays* L.) | | |
| **M. Sc. (Ag.)** | Anand Agricultural University, Anand (Gujarat) | Soil Science & Agricultural Chemistry | 2011 |
| | **Title of M. Sc. thesis:** Agronomic and Physiological Approaches for Biofortification of Wheat Grain with Zinc and Iron in *Typic Ustochrepts* soils of middle Gujarat | | |
| **B. Sc. (Ag.)** | Tamil Nadu Agricultural University, Coimbatore (Tamil Nadu) | Agricultural Sciences | 2009 |

| **Research Experience** | | | |
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| **Employer/Institution** | **Designation** | **Period** | **Scale of pay** |
| ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar | Scientist | 01.07.2017 — till date | 15600 – 39100 + RGP 6000 |
| ICAR-Indian Institute of Soil Science, Bhopal | Scientist | 11.04.2013 — 30.06.2017 | 15600 – 39100 + RGP 6000 |
| ICAR-National Academy of Agricultural Research Management, Hyderabad | Scientist | 01.01.2013 — 01.04.2013 | 15600 – 39100 + RGP 6000 |

| **Institutional research** | | | | |
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| **Title of the project** | **Level of association** | **Period** | | **Sponsoring organization** |
| | | **From** | **To** | |
| All India Coordinated Research Project on Micro- and Secondary Nutrients and Pollutant Elements in Soils and Plants (AICRP on Micronutrients) | Project Member | 11.04.2013 | 30.06.2017 | Indian Council of Agricultural Research, New Delhi |
| Standardization of foliar feeding of zinc for correcting its deficiency and grain enrichment in Wheat | PI | 01.06.2014 | 31.05.2017 | ICAR-IISS, Bhopal |
| **Sponsored project research** | | | | |
| Evaluation of Efficacy of Zinc Metalosate and Boron Metalosate Foliar Supplements for Maximizing Yield through Balanced Nutrition of important Crops grown in India | Consortium Co-PI/ Centre PI | 01.04.2015 | 30.06.2017 | Albion-Indofil Pvt. Ltd |
| Evaluation of Efficacy of Sulphur and Zinc Containing Complex Fertilizers for Maximizing Yield through Balanced Nutrition of Different Crops in India | Consortium Co-PI/ Centre PI | 01.04.2015 | 30.06.2017 | OCP-Zuari Agrochemicals Pvt. Ltd. |

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| **Teaching/ Guidance/ Paper setting & evaluation** | — |

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| **Awards/ distinctions/ Overseas research** | • **S. N. Ranade Memorial Encouragement Award—2017** for "Assessing the effect of Nano-Technology in Nutrition Research" by IMT Technologies Ltd., Pune.<br>• **Hari Om Ashram Sponsored Prof. J. P. Trivedi Award (2015)** for the research on "Management of micronutrient deficiency in soils of Gujarat in relation to soil, plant, animal and human health by The Gujarat Association for Agricultural Sciences.<br>• **Dhiru Morarji Memorial Award (2015)** of the Fertiliser Association of India for best publication in Indian Journal of Fertilisers.<br>• **National Eligibility Test (NET)** —2012 qualified in Soil Science/ Soil fertility and Microbiology (ICAR, India) in 2012.<br>• **ICAR-Non-Senior Research Fellowship -PGS (2012)** by Indian Council of Agricultural Research for pursuing Ph. D. in Soil Science.<br>• **ICAR-Junior Research Fellowship (2009-11)** by Indian Council of Agricultural Research for pursuing M. Sc. (Ag.) at Anand Agricultural University, Anand (Gujarat).<br>• **Mrs. Sampoornammal Medal (2008-09)** by TNAU, Coimbatore for Exceptional Academic record during B. Sc. (Agriculture) programme.<br>• **Rasi Seeds Prize (2008-09)**, instated by Rasi Seeds (P) Ltd. and given by TNAU, Coimbatore for Outstanding Performance in the discipline of Seed Science and Technology in the Under Graduate B. Sc. (Agriculture). |

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| | • **Dr. C. V. Govindasamy Medal (2008)** by ADAC &RI, TNAU, Tiruchirappalli for Outstanding Performance in the Under Graduate B. Sc. (Agriculture).<br>• **Dr. V. S. Subramanyan Prize (2008)** by TNAU, Coimbatore for Excellent Performance in the discipline of Plant Physiology during B. Sc. (Agriculture) programme.<br>• **ICAR-National Talent Scholarship (2005-09)** by ICAR, New Delhi, for securing Rank in All India Entrance Examination for Admission in Under Graduate Courses. |

| **Trainings organized** | | — | |
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| **Important trainings undergone** | | | |
| **Title** | **Duration** | **Institution** | **Year** |
| Mid Infrared Spectroscopy | 9-13 March | ICAR-IISS, Bhopal organized by World Agroforestry Centre, Kenya | 2015 |
| Winter School on "Recent advance in micro irrigation system and fertigation under covered and open cultivation for sustainable and enhanced crop production and productivity in Vertisols" | 9-29 September | ICAR-CIAE Bhopal | 2014 |

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| **Areas of current research** | • Aquatic Environment Monitoring & Assessment<br>• Soil and water quality management<br>• Micronutrients in soil-plant-animal-human *continuum* |

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| **Membership/position/Referee** | Member of Indian Society of Soil Science, New Delhi |

| **Publications** | |
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| **Research Articles (Peer Reviewed Journals)** | • Shukla, A. K., Sinha, N.K., **Pankaj K. Tiwari**, Chandra Prakash, Behera, S. K., Lenka, N. K, Singh, V. K., Dwivedi, B. S., Mazumdar, K, Kumar, A., Srivastava, P. C., Pachauri, S. P., Meena, M.C., Lakaria, B. L. and Siddiqui, S. (2016). Spatial Distribution and Management Zones for Sulfur and Micronutrients in Shiwalik Himalayan Region of India. *Land Degradation and Development*, DOI: 10.1002/ldr.2673.<br>• Shukla, A. K., **Pankaj K. Tiwari**, Pakhare, A. and Chandra Prakash (2016). Zinc and Iron in Soil, Plant, Animal and Human Health. *Indian Journal of Fertilisers*, 12(11): 133-149.<br>• Shukla, A. K., Behera, S. K., Lenka, N. K, **Pankaj K. Tiwari**, Chandra Prakash, Malik, R. S., Sinha, N. K., Singh, V. K., Patra, A. K. |

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| | and Chaudhari, S. K. (2016). Spatial variability of soil micronutrients in the intensively cultivated Trans-Gangetic Plains of India. *Soil & Tillage Research,* 163: 282–289.<br>• Shukla, A. K., **Pankaj. K. Tiwari**, Chandra Prakash, Patra, A. K., Meena, M.C., Singh, P., Tagore, G. S. and Rai, H. K. (2016). Current Status of Micronutrient Deficiencies in Soils and Crop-specific Recommendations for Different Agro-climatic Zones of Madhya Pradesh, *Indian Journal of Fertilisers*, 12(3): 26-35.<br>• Shukla, A. K., Malik, R. S., **Pankaj K. Tiwari**, Chandra Prakash, Behera, S. K., Yadav, H. and Narwal, R. P. (2015). Status of Micronutrient Deficiencies in Soils of Haryana Impact on Crop Productivity and Human Health, *Indian Journal of Fertilisers* 11(5):16-27<br>• Shukla, A. K., Surendra Babu, P., **Pankaj K. Tiwari**, Chandra Prakash, Patra, A. K. and Patnaik, M. C. (2015). Mapping and Frequency Distribution of Current Micronutrient Deficiencies in Soils of Telangana for their Precise Management, *Indian Journal of Fertilisers*, 11(8): 33-43.<br>• Shukla, A. K., Srivastava, P. C., **Pankaj K. Tiwari**, Chandra Prakash, Patra, A. K., Singh, P. and S.D. Pachauri (2015). Mapping Current Micronutrients Deficiencies in Soils of Uttarakhand for Precise Micronutrient Management. *Indian Journal of Fertilisers*, 11(7): 52-63.<br>• Meena, B. P., Kumar, A., Lal, Sinha, N. K., **Pankaj K. Tiwari**, Dotaniya, M. L. Jat, N. K. and Meena, V. D. (2015). Soil microbial, chemical properties and crop productivity as affected by organic manure application in popcorn (*Zea mays* L. var. *everta*). *African Journal of Microbiology Research*, 9(21): 1402-1408.<br>• Shukla, A. K., **Pankaj K. Tiwari** and Chandra Prakash (2014). Micronutrients Deficiencies vis-à-vis Food and Nutritional Security of India. *Indian Journal of Fertilisers*, 11(7): 52-63. |
| **Coordinator's Reports/ Annual Reports** | • Shukla, A. K., **Pankaj K. Tiwari** (2016). Micro- and Secondary Nutrients and Pollutant Elements Research in India. Coordinator Report- AICRP on Micro- and Secondary Nutrients and Pollutant Elements in Soils and Plants (2014-16), ICAR-IISS, Bhopal. pp. 1-196.<br>• Shukla, A. K., **Pankaj K. Tiwari** (2014). Micro- and Secondary Nutrients and Pollutant Elements Research in India. Coordinator Report- AICRP on Micro- and Secondary Nutrients and Pollutant Elements in Soils and Plants (2011-13), ICAR-IISS, Bhopal. pp. 1-155.<br>• Shukla A. K., **Pankaj K Tiwari**, Takkar, P. N., Singh, P. and Subba Rao, A. (2014) (Editor): Final report on NAIP funded project on |

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| | Understanding the mechanism of variation in status of a few nutritionally important micronutrients in some important food crops and the mechanism of micronutrient enrichment in plant parts pp. 97. |
| **Book Chapters** | • Sinha, N. K., Mohanty, M., Gupta, S., **Pankaj K Tiwari**, Meena, B. P. and Rohit Patidar (2015). Crop growth simulation models in agricultural crop production. In crop growth simulation modelling and climate change (Eds: Mohanty *et al.*). Scientific Publisher, India, ISBN: 978-81-7233-9340 Pp 196-211. |
| **Bulletins/ Booklets/ Popular Articles** | • अरविन्द कुमार शुक्ला, **पंकज कुमार तिवारी**, पूजा सिंह, एवं के. एन. तिवारी (२०१७). भारतीय कृषि में सूक्ष्म पोषक तत्वों का बढ़ता महत्व, खेती अप्रैल २०१६ अंक. पेज सं. ५४-५८.<br>• Shukla, A. K., **Pankaj K. Tiwari**, Singh, P. and Tiwari, K.N. (2017). Macro Importance of Micronutrients in Indian Agriculture, Indian Farming 66 (10, 11 and 12), 67 (01): 27-32.<br>• **तिवारी, पी. के.**, शुक्ला, ए. के., सिद्दीकी, एस., मिश्रा, डी. एम. एवं कुमार ललित (२०१६). भारतीय मृदाओं में गंधक की कमी: वर्तमान स्थिति, प्रबंधन एवं फसलवार संस्तुतियाँ. खाद पत्रिका, जुलाई अंक, ४९-५९.<br>• शुक्ला, ए. के., **तिवारी, पी. के.**, सिद्दीकी, एस. एवं मिश्रा, डी. एम. (२०१६). **जिंक: मृदा में कमी, प्रबंधन एवं फसलवार संस्तुतियाँ**. प्रसार बुलेटिन २/२०१६, भारतीय मृदा विज्ञान संस्थान, भोपाल.<br>• शुक्ला, ए. के., **तिवारी, पी. के.**, सिद्दीकी, एस. एवं मिश्रा (२०१६). **गंधक (सल्फर): मृदा में कमी, प्रबंधन एवं फसलवार अनुशंषाएं**. प्रसार बुलेटिन २/२०१६, भारतीय मृदा विज्ञान संस्थान, भोपाल.<br>• शुक्ला, ए. के., **तिवारी, पी. के.**, सिद्दीकी, एस., पात्र, ए. के. एवं चौधरी, एस. के. (२०१६). **भारतीय मृदाओं में सूक्ष्म एवं गौण पोषक तत्वों की कमी की स्थिति, निवारण एवं फसलवार संस्तुतियाँ**. तकनीकी बुलेटिन ३/२०१६. भारतीय मृदा विज्ञान संस्थान, भोपाल.<br>• शुक्ला, ए. के., **तिवारी, पी. के.**, सिद्दीकी, एस., सिंह, पूजा एवं सुब्बाराव एस. (२०१४). **भारतीय मृदाओं में सूक्ष्म एवं गौण पोषक तत्वों की कमी की स्थिति, निवारण एवं फसलवार संस्तुतियाँ**. तकनीकी बुलेटिन १/२०१४. भारतीय मृदा विज्ञान संस्थान, भोपाल.<br>• मीणा, बी. पी., **तिवारी, पी. के.**, नीनू एस., दोतानिया, एम. एल., सिन्हा, एन. के., एवं बिश्वास ए. के. (२०१६). पॉपकॉर्न: विशिष्ट प्रकार की मक्का की सस्य क्रियाएं एवं मूल्य संवर्धन, खेती मार्च अंक.<br>• काटकर, आर. एन., शुक्ला, ए. के., खर्चे, व्ही. के., **पंकज कुमार तिवारी**, लाखे, एस., आगे, ए. देशमुख, पी, रु. एवं कडलग, ए. डी. (२०१७). भौगोलिक माहिती प्रणाली आधारित महाराष्ट्राच्या जमिनीतील, सुक्ष्म व दुय्यम अन्न्द्रव्ये, डॉ. पी. डी. के. वी., अकोला, महाराष्ट्र, पेज सं. १-७९. |