

# Profile

## Dr. Ashis Kumar Biswas



**Designation: Principal Scientist & Head,**  
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### Research Specialization:

**Dr. Ashis Kumar Biswas** through **basic, strategic and applied research** in areas of **soil chemistry & fertility, soil & water pollution, conservation agriculture, and soil health** over two decades has made original contributions in providing scientific basis **for integrating plant nutrient supply from soil, fertilizer and manure sources** along with soil moisture conservation measures for rainfed pulse-based cropping systems and soybean-wheat system and its validation in farmers' fields, **elucidating the possible mechanism of phosphate reaction** with different soils with special reference to the **surface property of dominant clay minerals** in finding the basis for maintenance fertilization in smectite dominant vertisols of India, **sink capacity** of mineralogically variant soils for **heavy metals, safe use of distillery effluents** in agriculture, **mapping and delineation of nitrate contaminated** areas in intensively cultivated districts of the country, development of **soil organic C and N turnover model**, designing methodology to estimate **relative soil quality index**, and development of **nano rock phosphate** and **modified urea products** like oleoresin coated urea, zeolite-impregnated and biochar coated urea. He has also contributed immensely in developing and commercializing **Mridaparikshak**, a Minilab for soil testing and preparation of soil health cards. He is presently leading a **Consortia Research Platform (CRP) on Conservation Agriculture (CA)** comprising of inter-disciplinary teams of scientists from 11 research Institutes of ICAR.

### Professional Experience:

**Dr. Ashis Kumar Biswas** was born at Gaighata, North 24 Parganas, West Bengal and did his early education at Gaighata, West Bengal. He studied B. Sc. (Ag.) Hons. during 1981-'84 from Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, West Bengal and M. Sc. and Ph. D. in Soil Science & Agricultural Chemistry in 1987 and 1991, respectively, from IARI, New Delhi. He served as Lecturer (Res.) at RRS (Kalinpong), BCKV in 1991-92 for a brief period. He joined ARS (ICAR) in 1992 and started his career at ICAR-IISS in 1993 after completing FOCARS training at NAARM, Hyderabad and Subject Matter training at CSSRI, Karnal. He has been serving at ICAR-IISS, Bhopal since 1993 as a Scientist (1993-'97), Scientist (Sr. Scale) (1997-1999), Senior Scientist (1999-2007) and Principal Scientist since 2007 to date. He is the Head of the Division of Soil Chemistry & Fertility at ICAR-IISS, Bhopal from July 2, 2009. During his research career, Dr. Biswas has made outstanding contribution on different aspects of Soil research, namely, Soil Chemistry & Fertility, Soil & Water Pollution, Conservation Agriculture & Soil Health. Dr. Biswas has published more than 100 peer-reviewed research papers and reviews, and 50 other publications, which has been widely cited throughout the world (h-index 22, i10-index 49). He was actively involved in training, extension and guiding of postgraduate students.

### Awards and Honours:

Dr. A.K. Biswas obtained **Merit-cum-Means Scholarship** from ICAR in 1981-82 during B.Sc.(Ag.) Hons. Study; **Junior Fellowship** from ICAR through All India Competitive Examination for Master's Degree Programme in 1985; **IARI Junior and Senior Fellowships** for Master (1985-87) and Doctoral Degree (1987-91) Programmes, respectively. He is the recipient of **IARI Gold Medal** for outstanding academic performance during Master's Degree Programme in 1987; Prestigious **Jawahar Lal Nehru Award** from

ICAR for outstanding doctoral research in the field of Soil Science in 1992; **ISSS - Dr. J.S.P. Yadav Memorial Awards for Excellence in Soil Science - 2012** from Indian Society of Soil Science, New Delhi for his team, **Sri Ram Puraskar** from FAI in 2016, and more than ten **Prizes for Best Poster/Oral Presentation** in the Seminar/Symposia/ Conference/Congress, etc.. He has been elected **Fellow of the National Academy of Agricultural Sciences**, New Delhi in 2016 and Inducted as **Fellow of the Indian Society of Soil Science**, New Delhi in 2017. He acted as Soil Science Expert of **Knowledge Exchange Workshop** under the programme **Soil protection and rehabilitation for food security** in Ethiopia organized by GIZ, Germany under ProSoil Project in 2018. He also represented India as an Expert for **Exposure Visit on Conservation Agriculture** for sustainable intensification of agriculture in Bangladesh organized by SAARC Agriculture Centre, Dhaka in 2018. He delivered a **Invited Lead Lecture** entitled "Sustaining soil resources quality for evergreen revolution" at the Agriculture and Agro-forestry Section of the 100th Indian National Science Congress held at Kolkata on 7th January, 2013, He also delivered the **30<sup>th</sup> Dr. SP Raychaudhury Memorial Lecture** at NBSS&LUP, Kolkata in 2019 awarded by ISSS. He has served the Indian Society of Soil Science in following capacities: Member of **Editorial Board** of the **Journal of the Society** during 2011-15; **Councilor** for the biennium 2014-15; **President** (2014-15), **Vice-President** (2011-14) and **Secretary** (2009-11) of **Bhopal Chapter of ISSS**; and **Member** of the **Judging Committee** for ISSS Best Doctoral Research Presentation Award and ISSS Zonal Award 2014 at Udaipur. He also acted as a **Scientific Reviewer** of Journal of the Indian Society of Soil Science, Bioresource Technology, Journal of Hazardous Materials, European Journal of Soil Research, Agricultural Research, Agropedology, Legume Research, etc. and AP-Cess Fund Scheme of ICAR since 2003. He acted as **Advisor at ASRB**, New Delhi twice for Career Advancement Scheme (CAS) for promotion of Sr. Scientist to Pr. Scientist in the Discipline of Soil Science- Pedology in 2012 and 2013 and as a **Member, Assessment Committee** (DG's & DDG's Nominee) for **CAS promotion** of scientific staff in different ICAR Institutes. He has been appointed as **Adjunct Faculty** of **Uttar Banga Krishi Viswavidyalaya**, Cooch Behar, WB w.e.f. 20.09.2018.

## Ten Best Papers:

1. Ramana S, **Biswas AK**, Singh AB and Yadava RBR (2002) Relative efficacy of different distillery effluents on growth, nitrogen fixation and yield of groundnut. *Biores. Tech.*.81(2): 117-121.
2. Hati KM, **Biswas AK**, Bandopadhyay KK and Misra AK (2004) Effect of post-methanation effluent on soil physical properties under a soybean-wheat system in a vertisol. *J. Plant Nutr. Soil Sci.* 167: 584-590.
3. **Biswas AK**, Mohanty, M, Hati KM, and Misra AK (2009). Distillery effluents effect on soil organic carbon and aggregate stability of a Vertisol in India. *Soil Tillage Res.*104:241-246
4. Malik Neetu, **Biswas AK**, Qureshi TA, Borana K and Virha Rachna (2010) Bioaccumulation of heavy metals in fish tissues of a freshwater lake of Bhopal. *Environ. Monit. Assess.* 160:267-276.
5. Ramesh K, Damodar Reddy D, **Biswas AK** and Subba Rao A (2011). Zeolites and Their Potential Uses in Agriculture. *Adv. Agron.* 113:215-236.
6. Jha P, Lakaria BL, **Biswas AK**, Saha R, Mahapatra P, Agarwal BK, Sahi DK, Wanjari RH, Lal R, Singh Muneshwar and Subba Rao A (2014) Effects of carbon input on soil carbon stability and nitrogen dynamics. *Agri, Ecos. Env.* 189:36-42.
7. Adhikari Tapan, Kundu S., **Biswas AK**, Tarafdar JC and Subba Rao A (2015). Characterization of zinc oxide nano particles and its effect on growth of maize (*Zea mays* L.) *Plant. J. Plant Nutri.* 38:1505–1515
8. **Biswas AK**, Jha Pramod, Sharma Pankaj, Hati KM, Ramana S, Singh AB and Patra AK (2018). Impact of Distillery Effluent on Soil Carbon and Nitrogen Dynamics in a Vertisol of Central India. *Comm. Soil Sci. Plant Anal.* 49: 2189-2196.
9. Somasundaram J, Chaudhary RS, Awanish Kumar D, **Biswas AK**, Sinha NK, Mohanty M, Hati KM, Jha P, Sankar M, Patra AK, Dalal R and Chaudhari SK (2018). Effect of contrasting tillage and cropping systems on soil aggregation, carbon pools and aggregate-associated carbon in rainfed Vertisols. *European J. Soil Sci.* 69: 879-891.
10. Meena BP, **Biswas AK**, Singh M, Chaudhary RS, Singh AB, Das H and Patra AK (2019). Long-term sustaining crop productivity and soil health in maize–chickpea system through integrated nutrient management practices in Vertisols of central India. *Field Crops Res.* 232: 62-76.

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