Dr. Samikhya Bhuyan

Personal Profile



Dr. Samikhya Bhuyan

Assistant Professor, Department of Soil Science and Agricultural Chemistry, Rajiv Gandhi University, Rono Hills, Doimukh Arunachal Pradesh-791112

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Educational Profile

Ph.D. (Soil Science)	• Subject- Soil Science • Year of Award- 2023 • Assam Agricultural University, Jorhat, Assam
M.Sc. (Soil Science)	• Subject- Soil Science • Year of Award- 2017 • Assam Agricultural University, Jorhat, Assam
B.Sc. (Agriculture)	• Subject – Agriculture • Assam Agricultural University, Jorhat, Assam

Professional Experience

Assistant Professor Department of Soil Science and Agricultural Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	24/05/2023-Till Date

Guest Faculty Department of Soil Science and Agricultural Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	23/09/2022-23/05/2023
Young Professional II Indian Council of Agricultural Research (ICAR) , National Bureau of Soil Survey and Land Use Planning (NBSS & LUP), Jorhat, Assam	02/03/2022- 21/09/2022
Assistant Professor Department of B. VOC, Kaliabor College, Assam, India	07/08/2017- 28/06/2019

Administrative Experience

Head (i/c) Department of Soil Science and Agricultural Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	May 2023 –July 2024
Deputy Warden Pakke Halls of residence, Rajiv Gandhi University, Arunachal Pradesh, India	Jan 2024-Till Date
Convener National Webinar on Nourishing the Land and the People: Millet Farming and Soil Health in Arunachal Pradesh organized by the Faculty of Agricultural Sciences, Rajiv Gandhi University, Arunachal Pradesh on November 10, 2023.	November 10, 2023.
PMKVY 4.0 Coordinator of PMKVY 4.0 implementation committee for smooth functioning and conduct of courses offered in Skill Hub Centre, Rajiv Gandhi University	November 18, 2023- Till Date

Awards & Honor's

S. No.	Name of the Award	Awarded for	Year in which received
1.	State Merit Scholarship	Excellence in M.Sc (Ag.) Programme	2015-2017
2.	State Merit Scholarship	Excellence Ph. D (Soil Science) Programme	2019-2022
3.	International Fellowships	Research Scholar in the university of Nebraska ,Lincoln (USA)	2019
4.	Best Teacher Award	SABUJEEMA Awards Ceremony, Honoring Excellence in Teaching and Research on the eve of Teacher's Day	2023
5.	Dr. A.K. Srivastava Young Scientist Award	Commendable contribution in Soil Science during 4 th Biotic Science congress held in Meghalaya	2024

Patent:

1. "**Agricultural drone for crop health monitoring**", Design No: 388119-001, Date of issue: 23/08/2023 (Bal Veer Singh, Shakti Singh, Priya Srivastava, **Samikhya Bhuyan**, Monika Patel, Y. S. Mailem, Vinay Kumar, Lalit Upadhyay)
2. "**Microwave sensor based soil analyze**r", Design No: 396137-001 , Date of issue: 26/09/2023 (Bal Veer Singh, N. S. Rana, Priya Srivastava, Narinder Panotra, C. L. Maurya, Durga Prasad, Hiren Das, **Samikhya Bhuyan**)

Sanctioned Project

"**Real time soil quality information for sustainability in Rono hills, Doimukh, Arunachal Pradesh , India**" Sanctioned for seed money grant of Rajiv Gandhi University, Rono Hills, Doimukh, Arunachal Pradesh- 791112.

Research Interests

- Soil Physics
- Precision soil quality assessment
- Soil Microbiology

Certifications

ICAR-NET (2021)
Participated online training programme on " Geospatial Analysis using QGIS & R " organized by ICAR-NAARM 14-19 Feb,2022
21 Days winter school in online mode on "Emerging problems & Recent advances in Applied Sciences " organized by Astha Foundation ,Meerut (UP) India during 28 February to 18 March ,2023
Successful completion of Faculty Induction Programme conducted by UGC, HRDC, JNTUH, Hyderabad, Telangana, India from 19 th June to 21 st July, 2023
Participated in the Online Workshop on Science Writing from 25 June to 30 September 2023, organized by Current Science Association , Bengaluru
Participation in NPTEL Awareness Workshop conducted on November 22, 2023 by NPTEL, IIT Madras in Rajiv Gandhi University, Arunachal Pradesh.
Participation at "Megha Start –Up Expo 2023 Organized by North Eastern Hill University (NEHU), Meghalaya and achieved best Exhibitor Award.
Participated NEP 2020 Orientation & Sensitization Programme organized by Malaviya Mission Teachers Training programme of UGC, Mizoram University from 19 th to 28 th March, 2024.
Participated short course on " Hands on training on statistical analysis and exploring the role of agriculture in industry domain " organized by the Indian society of Agronomy during 22-31 August,2024
Successfully completed the Multi-Disciplinary Refresher Programme entitled, "Indian Knowledge System in the Context of Higher Education: Relevance and implications in the contemporary era" organized by UGC-MMTTC, Assam University, Silchar during March 27th to April 11th, 2025.

Publications

Research papers

Bhuyan, S., Patgiri, D.K., Medhi, B.K., Deka, B., Kandali, G..G., Medhi, S. J., Kalidas-Singh, S., Debnath, A., Zhiipao, R. R., Tsomu, T., Sandillya, M.. (2024) Prediction of Soil Quality Index (SQI) and Its Minimum Dataset Indicators for Rice-Based Cropping Systems in the North Bank Plain Zone of Assam. ***Eurasian Soil Sc***. Vol 57, pp. 1718-1729 https://doi.org/10.1134/S1064229324600854 (IF 1.4)

Pachani, S., Kandali, G. G., Medhi, B. K., Saikia, L., Basumatary, A., Begum, M., & **Bhuyan, S**. (2025, January). Zeolite-based nano phosphatic fertilizer for enhancing phosphorus availability in acidic soils of Assam, India. ***Eurasian Journal of Soil Science***, *14*(1), 87–97 (IF 1.4)

Yadav, K. K., Ahmad, B., Singh, S., Kumar, A., Kumar, V., Singh, S. N., Chaturvedi, A., Chaturvedi, S. K., Mishra, T. S., Bentham, J. R., **Bhuyan, S.,** & Kumar, R. (2026). Soil carbon sequestration as a climate change mitigation strategy: A review. ***Journal of Global Innovations in Agricultural Sciences***, *14*(2), 408–420.

Sarming, T., Zhiipao, R. R**., Bhuyan, S.,** Singh, S. K., & Devegowda, S. R. (2025). Nutrient sources and placement methods on dry matter accumulation and yield of Indian mustard (*Brassica juncea* L.) under Eastern Himalayan region. ***Journal of Soils and Crops***, *35*(1), 32–35.

Kumari, P., Tsomu, T., Singh, A.K., Tasung, A., Debnath, A., Sharma, M.M., Bhuyan, S., Samyor, D., Sahu, T. and Kumar, Y., (2024). Study on the physiological impact of salicylic acid and kinetin on growth dynamics, floral morphogenesis and seed yield of Sweet William. ***Indian Journal of Horticultur****e*, 81(02), pp.129-134. (IF 0.236)

Bhuyan, S., Kalidas – Singh, S., Debnath, A., Tsomu, T., Narayan, S. R., Sharma, M. M., & Zhiipao, R. R. (2024). Soil physical health index (SPHI): Its indicator parameters impacting critical soil physical processes. ***Journal of Soils and Crops***, *34*(2), 315–321 (UGC CARE I)

Bhuyan, S., Narayan, S. R., Bagang, P., Umbrey, Y., Tangjang, A., Sharma, M. M., & Samyor, D. (2024, December). Assessing nutrient status in organic tea garden of Upper Brahmaputra Valley Zone of Assam. ***Journal of Soils and Crops***, *34*(2), 307–309 (UGC CARE I)

Tsomu, T., Patel, H. C., **Bhuyan, S**., Sharma, M. M., Samyor, D., & Tasung, A. (2024, June). Evaluating

the impact of plant growth regulators and micronutrients on fruit set, yield and chemical characteristics of mango leaves. ***Indian Journal of Hill Farming***, *37*(1), 1–6 (UGC CARE I)

Bhuyan, S., Singh, S. K., Debnath, A., Zhiipao, R. R., Tsomu, T., Barman, A., Sharma, M. M., Tangjang, A., Umbrey, Y., & Bagang, P. (2024). Regional soil health index (SHI) using simple additive method. ***BCA,*** 24(1), 199-205. https://doi.org/10.51470/BCA.2024.24.1.1299 (**NAAS 5.31**) (UGC CARE II)

Bhuyan, S., Kandali, G. G., Kalidas-Singh, S., Meena, R. S., Medhi, S. J., Tangjang, A., Debnath, A., Bagang, P., Umbrey, Y., & Deka, B. Soil Organic Carbon Stock in the Tea Garden of North –East India as Affected by the Organic and Conventional Management Practices (2023). ***Eco. Env. & Cons.,*** Vol 29, 325-330 (**NAAS 5.41**) (UGC CARE II)

Swain, S. K., Kalidas-Singh, S.***,** Puyam, A., Thakuria, D., Maimom, S., Zhiipao, R. R., Debnath, A., **Bhuyan, S.**, Homeshwari-Devi, M., Huidrom, S., Tsomu, T., Umbrey, Y., Bagang, P., Ravat, V. K., Lap, B., Tangjang, A., &Devegowda, S. R (2024) A comparative study of localized phosphorus application and broadcasting method on biomass production and their use efficiency on Chilli (Capsicum annuum) under alkaline soil. ***Frontiers in Plant Science.*** **https://www.frontiersin.org/articles/10.3389/fpls.2024.1304963/abstract** (IF 4.1)

Bharali, D., **Bhuyan, S**., Rout, S., Behera, H. S., & Gupta, S. (2024). Integrating policy frameworks with soil and plant conservation economics: Strategies for sustainable agricultural practices. ***Agriculture Archives: An International Journal***. Vol **2 (2) 39-44. https://doi.org/10.51470/AGRI.2024.3.2.39**

Abonmai T*****, Singh M. S, Devi K M, Gogoi M, Irungbam P, **Bhuyan S** (2023). Agro-morphological Characterization for Evaluation of Potential Upland Red Rice Cultivars in Manipur, India**.** ***Int. J. Environ. Clim. Change.,***13(9) : 3255-3263 (**NAAS 5.13**)

Gawande V*****, Razauddin, Das H, Gautam R, Manisankar G, **Bhuyan S**, Kurdeka A K (2023). Exploring the Future of Agriculture through Nanotechnology: A Review***, Int. J. Environ. Clim. Change***., 13(10): 215-228 (**NAAS 5.13**)

Bhuyan S*, Patgiri D K, Medhi S J, Chutia D, Swaroop R S, Sandillya M (2023). Spatial Distribution of

Soil Nutrient Status of Biswanath District, Assam, North East India. ***International Journal of Plant & Soil Science.,*** 35(8) :145-157 (**NAAS 5.07**)

Bhuyan S*, Patgiri D K, Medhi S J, Patel R and Abonmai T (2023). Machine Learning-based Crop Recommendation System in Biswanath District of Assam. ***Biological Forum – An International Journal.,*** 15(3): 417-421 (**NASS 5.11**) (UGC CARE I)

Bhuyan S*, Kandali G G, Choudhari B, Rajkhowa J and Pattanaik I (2022) Effect of management practices on soil acidity component in tea soil of Assam. ***The Pharma Innovation Journal.,*** 11(3): 223-228 (**NASS 5.23**)

Rajkhowa J*****, Gogoi A, **Bhuyan S**, Burhagohain A and Mishra D J (2022). Effect of chemical pruning as an alternative for development of lateral branches in young newly planted tea., ***The Pharma Innovation Journal***; 11(3): 1257-1261 (**NASS 5.23**)

Bhuyan S*, Kandali G G, Deka K, Karmakar RM, Choudhury M and Borah K (2018) Impact of organic and conventional tea cultivation practices on soil health., ***International Journal of Chemical Studies***; 6(3): 502-508 (**NASS 5.31)**

Book Chapter

Shakeel, A., Jaggi, S., **Bhuyan, S**., Kumar, D., & Gupta, S. (2024). **Rhizosphere revolution: Unveiling the secrets of insect pheromones in soil health and vermicompost production**. In Vermicompost: Nature's gold (pp. 76–96). Routledge: Taylor & Francis Group, CRC Press. https://doi.org/10.32943497

Bhuyan, S., & Kalidas-Singh, S. (2024). **Soil health: The foundation of exceptional tea production**. In *Tea growing in Assam* (pp. 9–17). (ISBN 978-93-84900-05-2)

Bhuyan S, Kalidas-Singh, S., Debnath, A (2023). **Cultivating cotton: From planting to harvesting**. B.B Kalita, N Gogoi, S Bhuyan, S Boruah (Ed), "The Cotton Path: From Farm to Wardrobe (Volume 1) (pp.25-32). Department of Textiles & Apparel Designing, College of Community Science, Jorhat-13

Bhuyan S, Tangjang S, Medhi S J, Patel R (2023). **Soil Health Management in Arunachal Pradesh, India**. Sushant Kumar (Ed), *Novel Technologies in Modern Agriculture* (pp.203-209). Vital biotech publication

Bhuyan S, Laxman T, Saikanth DRK, Badekhan A (2023). **Advanced Farming Technologies for Pollution Reduction and Increased Crop Productivity**. Sumit Rai (Ed), *Advanced Farming Technology* (pp.194-214). Scripown Publication

Bhuyan S, Patgiri D K, Kandali G G (2021). **Restoration of Soil Health: The Options to Agricultural Sustainability**. Chandra Shekhar (Ed), *Current Research and Review in Soil Science* (pp.113-134). Bright Sky Publications

Bhuyan S, Kandali G G, Patgiri D K (2021). **Soil Health: The Key to Agricultural Sustainability**. Sanjay-Swami (Ed), Advancing Innovations in Sustainable Agriculture (Volume 1) (pp.16-29). Vital biotech publications

Published Book

Reddy K. J, **Bhuyan S***, Rai S, Das H, Jaiswal S (2023). **Soil Conservation and Watershed Management**. BS Global Publication House, Uttar Pradesh (ISBN: 978-8196-4973-2-3)

Jain, P., Singh, A. K., Kumar, H., **Bhuyan, S**., & Dey Sarkar, J. (2025). **Fundamentals of soil science**. DvS Scientific Publication, Uttar Pradesh (ISBN: 9-789366-888842)

Bhuyan S*, Rajkhowa J **(2019). A handbook of tea culture**. Tycol style track, Tezpur (ISBN :978-93-84388-27-0)

Popular Article

Bhuyan S*, Patgiri D. K, Meena R. S, Sandilya M and Medhi S. J (2023). Artificial Soils: Impact on Agricultural Sustainability. **Vigyan Varta 4**(3): 111-113.

Presentation, abstract publication and participation in seminars/ symposium/ conferences/training programme and completion of online courses

- Delivered an expert talk as a resource person on "**Computational Models to Assist in Enhancing Agricultural Activities and Productivity**" during the AICTE-sponsored Vibrant Advocacy for Advancement and Nurturing of Indian Language Institutions, organized by the Department of Computer Science and Engineering, Rajiv Gandhi University, from August 7 to 9, 2024.
- Rapporteur, Technical Session, 2nd International Conference on "Frontiers in Science and Technology for Agricultural Transformation (FSTAT-2025)," organized by ICAR–National Academy of Agricultural Research Management (NAARM), Hyderabad, 25–26 September 2025.
- Presented poster "**Comparative Evaluation of soil acidity in organic and conventional system of tea cultivation for long term sustainability**" in International web conference on Resource Management and biodiversity conservation to Achieve Sustainable Development goals organized by Academy of natural resource conservation and management Lucknow on 11-12 September, 2021
- Presented paper "**Agricultural Waste management** "on national Symposium on Sustainable Waste management (SMW 2019) held on 3 rd August , Tezpur University.
- Presented oral paper "**Sustainable soil health management in North East India** "on 27th National Conference of Soil Conservation Society ,New Delhi during October 25-27, 2018.

Webinar /Workshop organized

- One Day National Webinar on **"NEP2020: Scope of Soil Science in National Education Policy for employment generation"** by Department of Soil Science and Agricultural Chemistry , Rajiv Gandhi University, Arunachal Pradesh, India
- Training conducted on "**Sustainable farming for supporting healthy soil for a healthy life**" on World Soil Day 2023 at Chiputa Village, Doimukh.