Annexure A

Table 1: Relative standard deviations for various elements analyzed in UV Visible spectrophotometer (Chemito 2600) and Flame photometer (Specord)

Instrument	Parameter	Method Detection Limit	Relative standard deviation
UV-VIS spectrophotometer	Phosphorus	0.5 mg kg^{-1}	1.60%
Flame Photometer	Potassium (K)	0.5 mg kg^{-1}	6.20%
	Sodium (Na)	0.5 mg kg^{-1}	4.18%

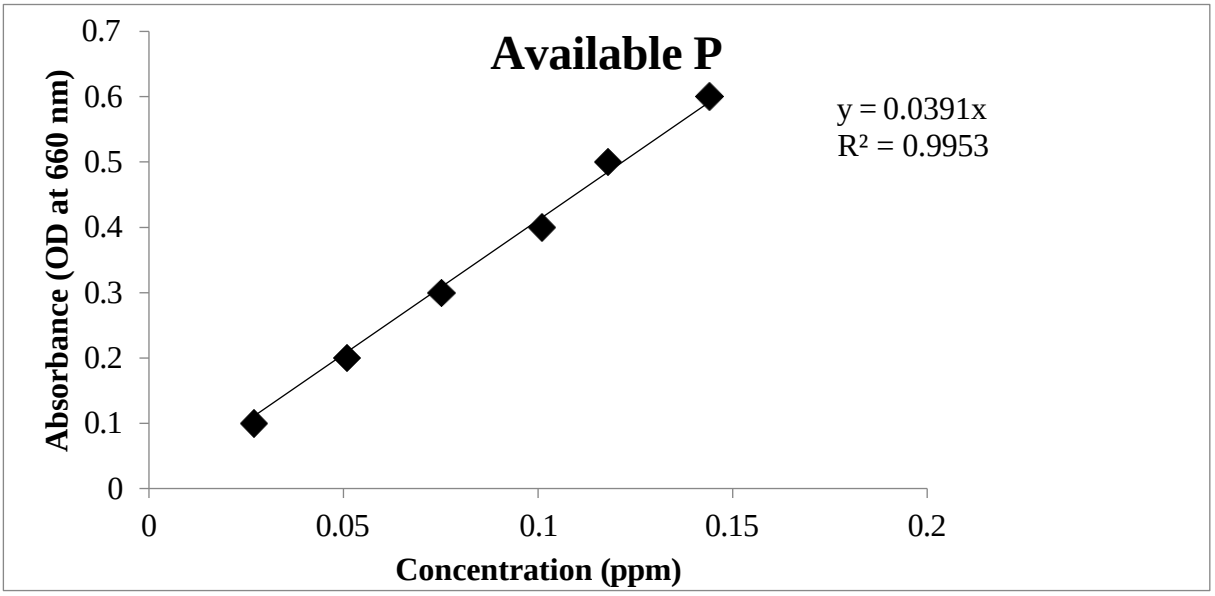

Fig. i: Calibration curve of available Phosphorus

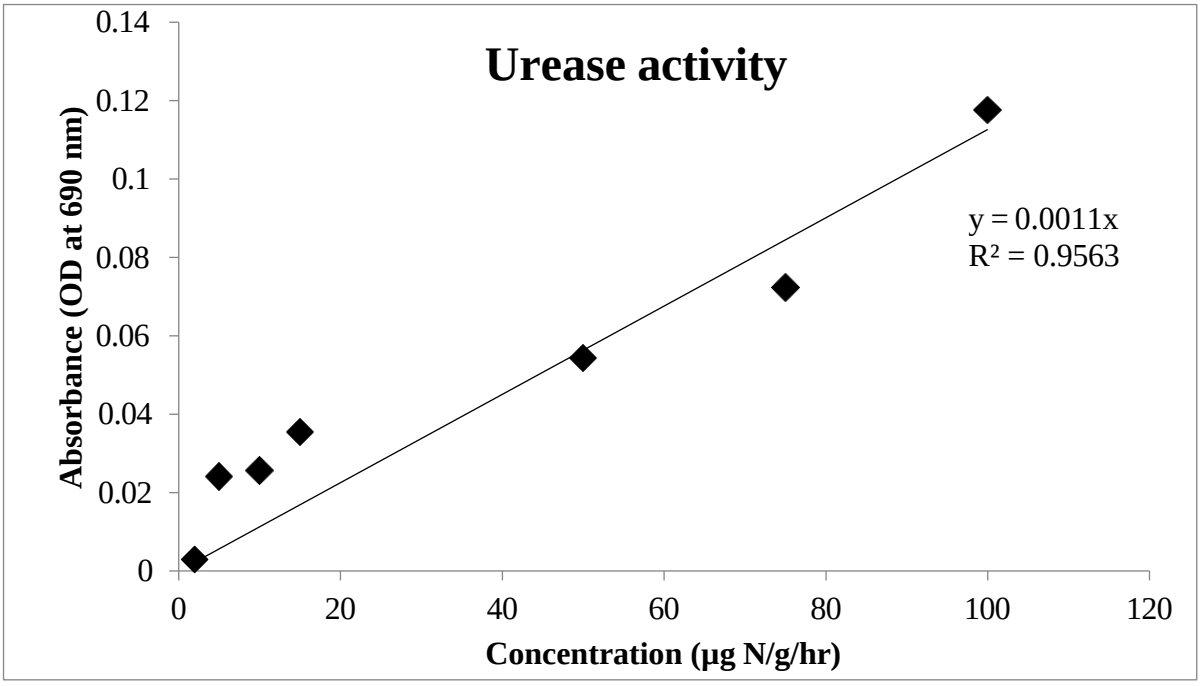

Fig. ii: Calibration curve of Urease

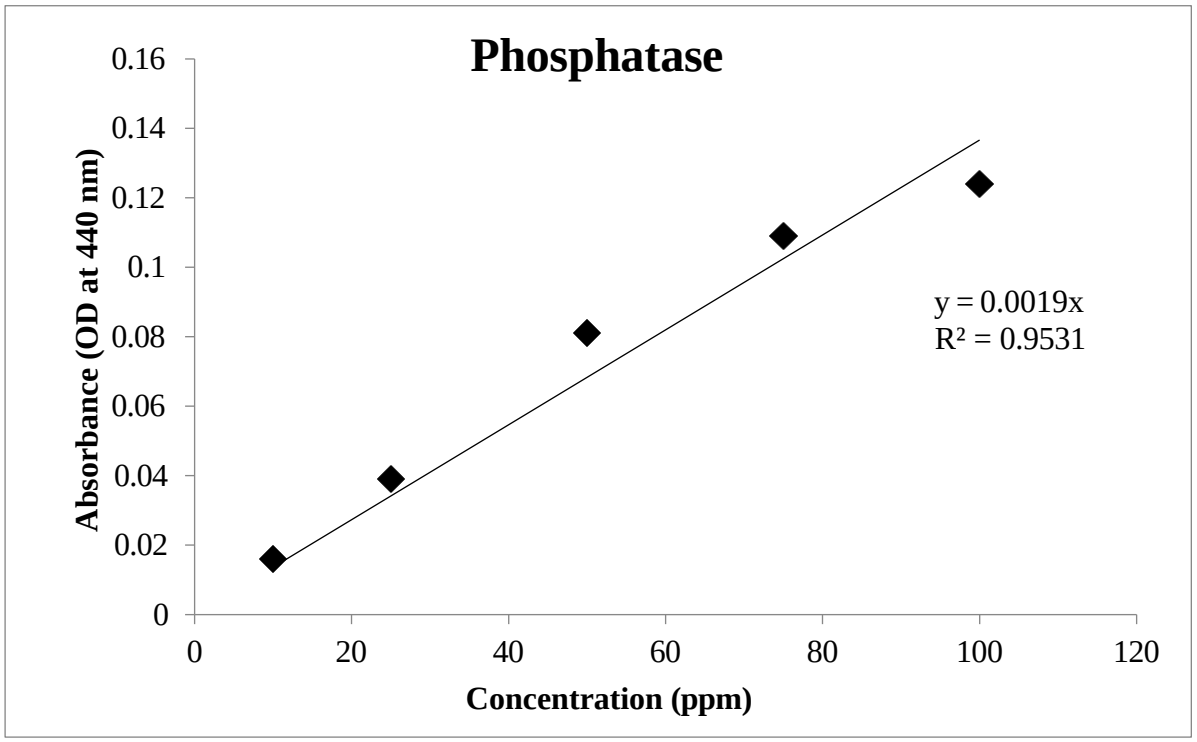

Fig. iii: Calibration curve of Phosphatase

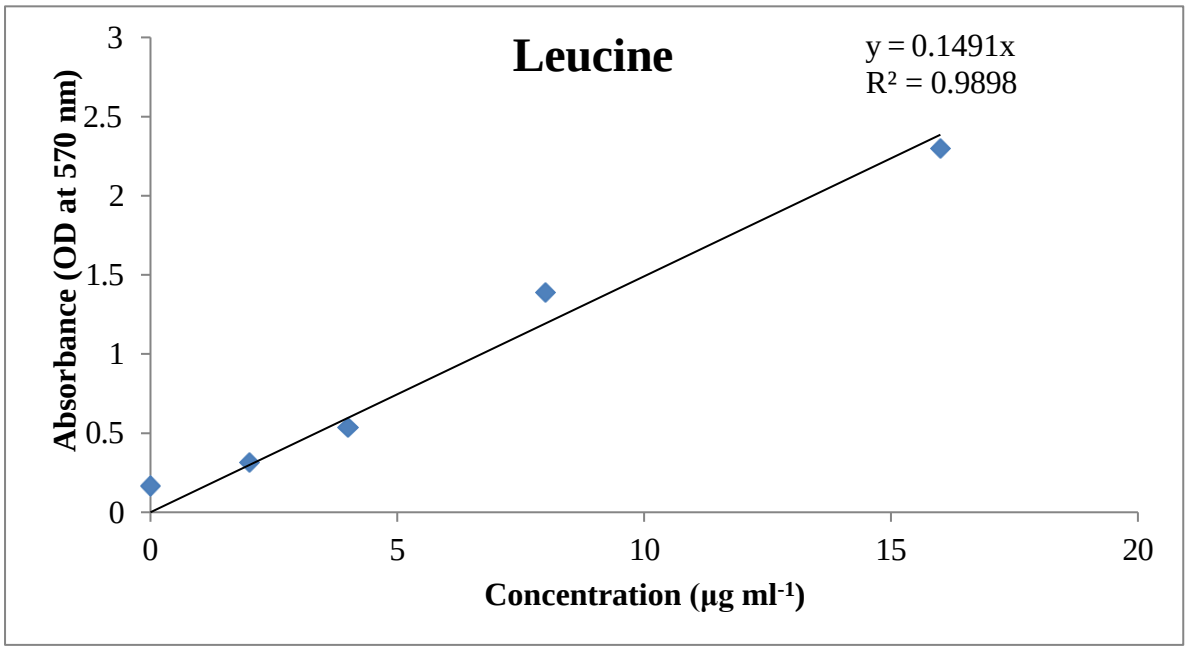

Fig. iv: Calibration curve of Leucine (Microbial biomass carbon)

PHOTOGRAPHS

Photo 1: Vermicompost unit of the university

Photo 2: Pot experiment inside the vermicompost unit

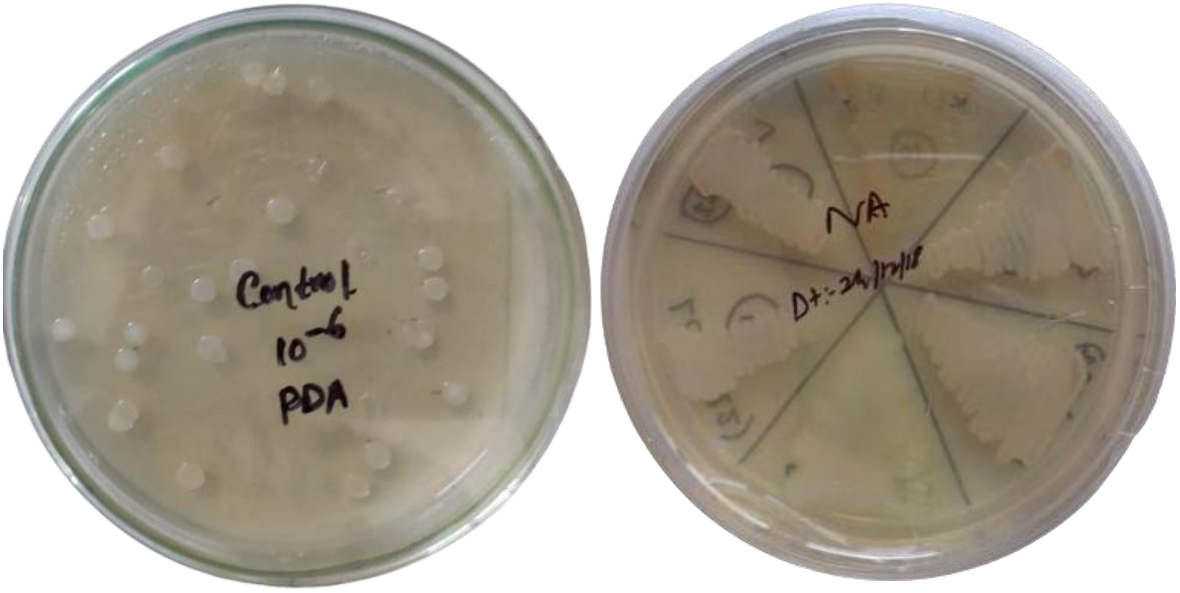

Photo 3: Microbial culture plates colony and isolated strains

Photo 4: Field experiment images

LIST OF PUBLICATIONS

List of Publications:

Publications from thesis:

1. Chowdhury, R., Hussain, N., Mukherjee, S., Barman, S., Mandal, H., Raul, P. K., & Bhattacharya, S. S. (2024). Bioethanol production from lignocellulosic waste without pre-treatment employing vermicompost and earthworm gut-isolated bacteria: Insights on waste to wealth conversion efficiency towards cleaner lifestyle. *Waste and Biomass Valorization*, 1-15. **(IF:3.4)**
2. Chowdhury, R., Barman, S., Choudhury, M., Kim, K.-H., & Bhattacharya, S. S. (2024). Earthworm modifies microbial community and functional genes for lignocellulosic waste valorization: Isolating plant-growth-promoting bacteria via next generation sequencing. *International Biodeterioration & Biodegradation, 193*, 105854. https://doi.org/10.1016/j.ibiod.2024.105854 **(IF:4.1)**

Publications from associated works:

1. Goswami, L., Ekblad, A., Choudhury, R., & Bhattacharya, S. S. (2024). Vermi-converted Tea Industry Coal Ash efficiently substitutes chemical fertilization for growth and yield of cabbage (*Brassica oleracea* var. capitata) in an alluvial soil: A field-based study on soil quality, nutrient translocation, and metal-risk remediation. *Science of the Total Environment, 907*, 168088. **(IF:9.8)**

Publications from book chapters:

1. Barman, S., Chowdhury, R., & Bhattacharya, S. S. (2023). Fungal-based land remediation. In V. C. Pandey (Ed.), *Bio-inspired land remediation* (Environmental contamination remediation and management). Springer, Cham. https://doi.org/10.1007/978-3-031-04931-6_7
2. Barman, S., Chowdhury, R., & Bhattacharya, S. S. (2023). Screening of endophytes for nematicidal activities. In A. Sankaranarayanan, N. Amaresan, & M. K. Dwivedi (Eds.), *Endophytic microbes: Isolation, identification, and bioactive potentials* (Springer Protocols Handbooks). Humana, New York, NY. https://doi.org/10.1007/978-1-0716-2827-0_24