

REFERENCES

- Abdulla, H. A., Al-Ghouti, M. A., & Soubra, L. (2025). Arsenic contamination in rice: a DPSIR analysis with a focus on top rice producers. *Science of the Total Environment*, 978(December 2024). <https://doi.org/10.1016/j.scitotenv.2025.179425>
- Ambarsari, H., Asriyani, L., Ridlo, A., Teknologi Lingkungan, P., Pengkajian dan Penerapan Teknologi, B., Syarif Hidayatullah Ciputat Jakarta, U., & Pengkajian Industri Proses dan Energi, P. (2020). Isolasi dan Produktivitas Bakteri Ureolitik dari Sedimen Muara Sungai Citarum Isolation and Productivity of Ureolytic Bacteria from Citarum River Estuary Sediments. *Jurnal Teknologi Lingkungan*, 21(2), 147–156.
- Arias, D., Gallardo, K., Saldana, M., & Galleguillos-Madrid, F. (2025). Urease-Driven Microbially Induced Carbonate Precipitation (MICP) for the Circular Valorization of Reverse Osmosis Brine Waste: A Perspective Review. *Minerals*, 15(5), 1–16. <https://doi.org/10.3390/min15050543>
- Campillo-Cora, C., Rodríguez-Seijo, A., Pérez-Rodríguez, P., Fernández-Calviño, D., & Santás-Miguel, V. (2025). Effect of heavy metal pollution on soil microorganisms: Influence of soil physicochemical properties. A systematic review. *European Journal of Soil Biology*, 124. <https://doi.org/10.1016/j.ejsobi.2024.103706>
- Clarà Saracho, A., Haigh, S. K., Hata, T., Soga, K., Farsang, S., Redfern, S. A. T., & Marek, E. (2020). Characterisation of CaCO₃ phases during strain-specific ureolytic precipitation. *Scientific Reports*, 10(1), 1–12. <https://doi.org/10.1038/s41598-020-66831-y>
- Comadran-Casas, C., Unluer, C., Bass, A. M., Macdonald, J., Khaksar Najafi, E., Spruzeniece, L., & Gauchotte-Lindsay, C. (2025). Bioremediation of multiple heavy metals through biostimulation of microbial-induced calcite precipitation at varying calcium-to-urea concentrations. *Journal of Hazardous Materials*, 491(November 2024), 137691. <https://doi.org/10.1016/j.jhazmat.2025.137691>

- Erdmann, N., & Strieth, D. (2023). Influencing factors on ureolytic microbiologically induced calcium carbonate precipitation for biocementation. *World Journal of Microbiology and Biotechnology*, 39(2), 1–18. <https://doi.org/10.1007/s11274-022-03499-8>
- Fan, D., Sun, J., Liu, C., Wang, S., Han, J., Agathokleous, E., & Zhu, Y. (2021). Measurement and modeling of hormesis in soil bacteria and fungi under single and combined treatments of Cd and Pb. *Science of the Total Environment*, 783, 147494. <https://doi.org/10.1016/j.scitotenv.2021.147494>
- Gomez-Caminero, A, P Howe, M Hughes, E Kenyon, DR Lewis, m Moore, J Ng, A. A. and G. B. (2001). *Environmental Health Criteria 224 ARSENIC AND ARSENIC COMPOUNDS (Second Edition)*. 1–66.
- Gupta, A. (2022). *Consequences of Arsenic Contamination on Plants and Mycoremediation-Mediated Arsenic Stress Tolerance for Sustainable Agriculture*. 1–27.
- He, J., Liu, Y., Liu, L., Yan, B., Li, L., Meng, H., Hang, L., Qi, Y., Wu, M., & Gao, Y. (2023). Recent development on optimization of bio-cementation for soil stabilization and wind erosion control. *Biogeotechnics*, 1(2). <https://doi.org/10.1016/j.bgtech.2023.100022>
- Holguin, G., Vazquez, P., & Bashan, Y. (2001). The role of sediment microorganisms in the productivity, conservation, and rehabilitation of mangrove ecosystems: An overview. *Biology and Fertility of Soils*, 33(4), 265–278, <https://doi.org/10.1007/s003740000319>
- Jeong, S., Lee, H., Kim, Y. T., & Yoon, H. O. (2017). Development of a simultaneous analytical method to determine arsenic speciation using HPLC-ICP-MS: Arsenate, arsenite, monomethylarsonic acid, dimethylarsinic acid, dimethyldithioarsinic acid, and dimethylmonothioarsinic acid. *Microchemical Journal*, 134, 295–300. <https://doi.org/10.1016/j.microc.2017.06.011>
- Kumar, A., Song, H. W., Mishra, S., Zhang, W., Zhang, Y. L., Zhang, Q. R., & Yu, Z. G. (2023). Application of microbial-induced carbonate precipitation (MICP) techniques to remove heavy metal in the natural environment: A

- critical review. *Chemosphere*, 318(January).
<https://doi.org/10.1016/j.chemosphere.2023.137894>
- Leeprasert, L., Chonudomkul, D., & Boonmak, C. (2022). Biocalcifying Potential of Ureolytic Bacteria Isolated from Soil for Biocementation and Material Crack Repair. *Microorganisms*, 10(5).
<https://doi.org/10.3390/microorganisms10050963>
- Linda, T. M., Rahmani, S. S., Wati, A. S., Febriarti, B. L., Futra, D., Olivia, M., & Juliantari, E. (2025). The Ureolytic Soil Bacteria *Bacillus albus*, a potential Agent for Biocement. *HAYATI Journal of Biosciences*, 32(3), 829–839.
<https://doi.org/10.4308/hjb.32.3.829-839>
- Maulas, K. M., Paredes, C. S., Tabelin, C. B., Jose, M. A., Opiso, E. M., Arima, T., Park, I., Mufalo, W., Ito, M., Igarashi, T., Phengsaart, T., Villas, E., Dagondon, S. L., Metillo, E. B., Uy, M. M., Manua, A. J. A., & Villacorte-Tabelin, M. (2024). Isolation and Characterization of Indigenous Ureolytic Bacteria from Mindanao, Philippines: Prospects for Microbially Induced Carbonate Precipitation (MICP). *Minerals*, 14(4). <https://doi.org/10.3390/min14040339>
- Mujah, D., Shahin, M. A., & Cheng, L. (2017). State-of-the-Art Review of Biocementation by Microbially Induced Calcite Precipitation (MICP) for Soil Stabilization. *Geomicrobiology Journal*, 34(6), 524–537.
<https://doi.org/10.1080/01490451.2016.1225866>
- Rajasekar, A., Wilkinson, S., & Moy, C. K. S. (2021). Environmental Science and Ecotechnology MICP as a potential sustainable technique to treat or entrap contaminants in the natural environment : A review. *Environmental Science and Ecotechnology*, 6, 100096. <https://doi.org/10.1016/j.ese.2021.100096>
- Rajasekar, A., Zhao, C., Wu, S., Murava, R. T., Norgbey, E., Omorogie, A. I., & Moy, C. K. S. (2025). Removal of high concentrations of zinc, cadmium, and nickel heavy metals by *Bacillus* and *Comamonas* through microbially induced carbonate precipitation. *Biodegradation*, 36(3), 1–18.
<https://doi.org/10.1007/s10532-025-10131-7>
- Rajasekar, A., Zhao, C., Wu, S., Murava, R. T., & Wilkinson, S. (2024). Synergistic

- biocementation: harnessing Comamonas and Bacillus ureolytic bacteria for enhanced sand stabilization. *World Journal of Microbiology and Biotechnology*, 40(7). <https://doi.org/10.1007/s11274-024-04038-3>
- Razzak, S. A., Faruque, M. O., Alsheikh, Z., Alsheikhmohamad, L., Alkuroud, D., Alfayez, A., Hossain, S. M. Z., & Hossain, M. M. (2022). A comprehensive review on conventional and biological-driven heavy metals removal from industrial wastewater. *Environmental Advances*, 7(October 2021). <https://doi.org/10.1016/j.envadv.2022.100168>
- Sadee, B. A., Zebari, S. M. S., Galali, Y., & Saleem, M. F. (2025). A review on arsenic contamination in drinking water: sources, health impacts, and remediation approaches. *RSC Advances*, 15(4), 2684–2703. <https://doi.org/10.1039/d4ra08867k>
- Schiller, C. M., Fowler, B. A., & Woods, J. S. (1977). Effects of arsenic on pyruvate dehydrogenase activation. *Environmental Health Perspectives*, Vol. 19(August), 205–207. <https://doi.org/10.1289/ehp.7719205>
- Sempelidou, L. M., Avlogiaris, G., & Antoniadis, I. (2024). Factors Affecting the Effectiveness of Email Marketing. *Springer Proceedings in Business and Economics*, 2(April), 1035–1050. https://doi.org/10.1007/978-3-031-49105-4_59
- Sevak, P., & Pushkar, B. (2024). Arsenic pollution cycle, toxicity and sustainable remediation technologies: A comprehensive review and bibliometric analysis. *Journal of Environmental Management*, 349(March 2023). <https://doi.org/10.1016/j.jenvman.2023.119504>
- Shrivastava, A., & Ghosh, D. (2015). *Arsenic Contamination in Soil and Sediment in India : Sources , Effects , and Remediation.* 35–46. <https://doi.org/10.1007/s40726-015-0004-2>
- Sinha, D., Datta, S., Mishra, R., Agarwal, P., Kumari, T., Adeyemi, S. B., Kumar Maurya, A., Ganguly, S., Atique, U., Seal, S., Kumari Gupta, L., Chowdhury, S., & Chen, J. T. (2023). Negative Impacts of Arsenic on Plants and Mitigation Strategies. *Plants*, 12(9), 1–44. <https://doi.org/10.3390/plants12091815>

- Sulastri, A., Widha Nugraheni, P., Sandy Ade Putra, L., & Kusumawardhani, E. (2022). Study of Rhizosphere Bacteria on the Coast of Mempawah Mangrove as Bioremediation Agents. *Jurnal Presipitasi*, 19(3), 464–476.
- Sultan, M. W., Qureshi, F., Ahmed, S., Kamyab, H., Rajendran, S., Ibrahim, H., & Yusuf, M. (2025). A comprehensive review on arsenic contamination in groundwater: Sources, detection, mitigation strategies and cost analysis. *Environmental Research*, 265(November 2024). <https://doi.org/10.1016/j.envres.2024.120457>
- Svane, S., Sigurdarson, J. J., Finkenwirth, F., Eitinger, T., & Karring, H. (2020). Inhibition of urease activity by different compounds provides insight into the modulation and association of bacterial nickel import and ureolysis. *Scientific Reports*, 10(1), 1–14. <https://doi.org/10.1038/s41598-020-65107-9>
- Taharia, M., Dey, D., Das, K., Sukul, U., Chen, J. S., Banerjee, P., Dey, G., Sharma, R. K., Lin, P. Y., & Chen, C. Y. (2024). Microbial induced carbonate precipitation for remediation of heavy metals, ions and radioactive elements: A comprehensive exploration of prospective applications in water and soil treatment. *Ecotoxicology and Environmental Safety*, 271(November 2023). <https://doi.org/10.1016/j.ecoenv.2024.115990>
- Wang, Y., Konstantinou, C., Tang, S., & Chen, H. (2023). *review*. 1(February).
- Wu, J., Wu, Z., Agathokleous, E., Zhu, Y., Fan, D., & Han, J. (2024). Unveiling a New Perspective on Cadmium-Induced Hormesis in Soil Enzyme Activity: The Relative Importance of Enzymatic Reaction Kinetics and Microbial Communities. *Agriculture (Switzerland)*, 14(6). <https://doi.org/10.3390/agriculture14060904>
- Xing, M., Yan, D., Hai, M., Zhang, Y., Zhang, Z., & Li, F. (2024). Arsenic Contamination in Sludge and Sediment and Relationship with Microbial Resistance Genes: Interactions and Remediation. *Water (Switzerland)*, 16(24), 1–23. <https://doi.org/10.3390/w16243633>
- Zhang, J., Shi, X., Chen, X., Huo, X., & Yu, Z. (2021). *Microbial-Induced Carbonate Precipitation : A Review on Influencing Factors and Applications*.

2021.

Zhang, W., Zhang, H., Xu, R., Qin, H., Liu, H., & Zhao, K. (2023). Heavy metal bioremediation using microbially induced carbonate precipitation: Key factors and enhancement strategies. *Frontiers in Microbiology*, 14(February), 1–13.
<https://doi.org/10.3389/fmicb.2023.1116970>

