ACADEMICIA: An International Multidisciplinary Research Journal
ISSN: 2249-7137 Vol. 15 Issue 2, February, 2025 SJIF 2022= 8.252
A peer reviewed journal

MICROPLASTICS IN AQUACULTURE: A BIBLIOMETRIC ANALYSIS BASED ON WEB OF SCIENCE DATA

Dr. Parul Puri*

*Assistant Professor,
Department of Zoology,
Maitreyi College, University of Delhi,
Delhi, INDIA
ORCID ID: https://orcid.org/0000-0003-2648-6101
Emailid: parul_acemail11@rediff.com

DOI: 10.5958/2249-7137.2025.00011.6

ABSTRACT

This study aims to analyze bibliometric repertoire on the topic microplastics in aquaculture with an understanding that occurrence of microplastics contribute to aquaculture pollution resulting in environmental hazards. Rising concerns on the theme is in relation to hazardous biotic as well as a biotic build-up of microplastics from off shore, on-shore anthropogenic activities in aquaculture practices, distressing ecosystem balance and global health. Bibliometric analysis on the search string 'microplastics in aquaculture' was obtained from Web of Science database dating publications 2011 onwards, signifying the recent and surging discourse on the issue. Country and organization based bibliographic outcomes depict larger participation of China with other regions in expanding its research initiatives. Besides the main theme, drawing relations to greater co-occurrence of key terms identifies with words such as fish, pollution, toxicity, sustainability and ingestion. Association to attainment of seven Sustainable Development Goals (SDGs) can also be deduced from analyzed records.

KEYWORDS: *Aquaculture; Microplastics; Sustainability; Hazard; Pollution; Bibliometric Analysis.*

REFERENCES

1. Bergmann, S. 2022. Salmon farming and marine microplastics as slow disasters. In: Ecologies of gender contemporary nature relations and the nonhuman turn, Routledge, England, 21pages.
2. Bhuyan, M.S. 2022. Effects of microplastics on fish and in human health. Frontiers in Environmental Science, 10,827289. https://doi.org/10.3389/fenvs.2022.827289
3. Bray, L., Digka, N., Tsangaris, C., Camedda, A., Gambaiani, D., de Lucia, G.A., Matiddi, M., Miaud, C., Palazzo, L., Pérez-Del-Olmo, A., Raga, J.A. and Silvestri, C., Kaberi, H. 2019. Determining suitable fish to monitor plastic ingestion trends in the Mediterranean Sea. Environmental Pollution, 247, 1071-1077. https://doi.org/10.1016/j.envpol.2019.01.100

4. Bubu-Davies, O.A. and Anwuri, P.A. 2022. Microplastics: Potential impacts on aquatic biodiversity. Tropical Freshwater Biology, 31,45-60. https://dx.doi.org/10.4314/tfb.v31i1.4

5. Coles, G.D., Stephen, D., Wratten, S.D. and Porter, J.R. 2016. Food and nutritional security requires adequate protein as well as energy, delivered from whole-year crop production. PeerJ 4, e2100. https://doi.org/10.7717/peerj.2100

6. Eberhard, D.M., Simons, G.M. and Fennig, C.D. 2024. In Ethnologue: Languages of the World (ed.) Twenty-seventh edition. Dallas, Texas, SIL International, http://www.ethnologue.com

7. Fadeeva, Z. and Berkel, R.V. 2021. Unlocking circular economy for prevention of marine plastic pollution: An exploration of G20 policy and initiatives. Journal of Environmental Management, 277, 111457. https://doi.org/10.1016/j.jenvman.2020.111457

8. FAO 2018. The State of World Fisheries and Aquaculture 2018 - Meeting the Sustainable Development Goals, Rome.

9. Iheanacho, S., Ogbu, M., Bhuyan, M.S. and Ogunji, J. 2023. Microplastic pollution: An emerging contaminant in aquaculture. Aquaculture and Fisheries, 8(6), 603-616.https://doi.org/10.1016/j.aaf.2023.01.007

10. Kibria, G. 2022. Global review and analysis of the presence of microplastics in fish. Asian Fisheries Science, 35,191-256. https://doi.org/10.33997/j.afs.2022.35.3.003

11. Kirstein, I.V., Kirmizi, S., Wichels, A., Garin-Fernandez, A., Erler, R., Löder, M. and Gerdts, G. 2016. Dangerous hitchhikers? Evidence for potentially pathogenic Vibrio spp. on microplastic particles. Marine Environmental Research, 120,1-8. https://doi.org/10.1016/j.marenvres.2016.07.004

12. Mahamud, A.G.M.S.U., Anu, M.S., Baroi, A., Datta, A., Khan, M.S.U., Rahman, M., Tabassum, T., Tanwi, J.T. and Rahman, T. 2022. Microplastics in fishmeal: A threatening issue for sustainable aquaculture and human health. Aquaculture Reports, 25, 101205. https://doi.org/10.1016/j.aqrep.2022.101205

13. NOAA, 2015. In Bibliometrics and research evaluation: Network analysis. https://libguides.library.noaa.gov/bibliometrics

14. Pranckute, R. 2021. Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. Publications, 9, 12. https://doi.org/10.3390/publications9010012

15. Tian, Y., Yang, Z., Yu, X., Jia, Z., Rosso, M., Dedman, S., Zhu, J., Xia, Y., Zhang, G., Yang, J. and Wang, J. 2022. Can we quantify the aquatic environmental plastic load from aquaculture? Water Research, 219, 118551.https://doi.org/10.1016/j.watres.2022.118551

16. UN 2015. In Transforming Our World: The 2030 Agenda For Sustainable Development A/RES/70/1. sustainabledevelopment.un.org

17. Wang, J., Tan, Z., Peng, J., Qiu, Q. and Li, M. 2016. The behaviors of MPs in the marine environment. Marine Environmental Research, 113, 7-17. https://doi.org/10.1016/j.marenvres.2015.10.014

18. WoS 2024. https://www.webofscience.com

19. Wright, S.L. and Kelly, F.J. 2017. Plastic and human health: a micro issue? Environmental Science & Technology, 51, 6634-6647. https://doi.org/10.1021/acs.est.7b00423

20. Wu, H., Hou, J. and Wang, X. 2023. A review of microplastic pollution in aquaculture: Sources, effects, removal strategies and prospects. Ecotoxicology and Environmental Safety, 252, 114567. https://doi.org/10.1016/j.ecoenv.2023.114567

21. Zhao, X. and You, F. 2024. Microplastic human dietary uptake from 1990 to 2018 grew across109 major developing and industrialized countries but can be halved by plastic debris removal. *Environmental Science&Technology*, 58, 8709-8723.https://doi.org/10.1021/acs.est.4c00010