

DAFTAR PUSTAKA

- Ahmann, D., & Dorgan, J. R. (2007). Bioengineering for pollution prevention through development of biobased energy and materials state of the science report. *Industrial Biotechnology*, 3(3), 218–259.
- Ambarsari, D. A., & Anggiani, M. (2022). Kajian Kelimpahan Mikroplastik Pada Sedimen di Wilayah Perairan Laut Indonesia. *Oseana*, 47(1), 20–28.
- Amin, B., Febriani, I. S., Nurrachmi, I., & Fauzi, M. (2020). Microplastics in Gastrointestinal Track of Some Commercial Fishes from Bengkalis Waters, Riau Province Indonesia. *Journal of Physics: Conference Series*, 1655(1).
- Andrady, A. L. (2011). Microplastics in the marine environment. *Marine Pollution Bulletin*, 62(8), 1596–1605.
- Annisa, K. S., Bakrie, A. H., Ginting, Y. C., & Hidayat, K. F. (2014). Pengaruh Pemakaian Mulsa Plastik Hitam Perak dan Aplikasi Dosis Zeolit pada Pertumbuhan dan Hasil Tanaman Radish (*Raphanus sativus* L.). *J. Agrotek Tropika*, 2(1), 30–35.
- Antoro, M. D., & Setyawan Purnama, I. L. (2014). Studi Perubahan Kualitas Air di Sungai Progo Bagian Hilir D.I. Yogyakarta Tahun 2009 – 2013. *Jurnal Bumi Indonesia*, 3(4).
- Arbie, R. R., Nugraha, W. D., & Sudarno. (2015). Studi Kemampuan Self Purification pada Sungai Progo Ditinjau dari Parameter Organik DO dan BOD (Point Source: Limbah Sentra Tahu Deda Tuksono, Kecamatan Sentolo, Kabupaten Kulon Progo, Provinsi D.I. Yogyakarta). *Jurnal Teknik Lingkungan*, 4(3), 1–15. <http://ejournal-s1.undip.ac.id/index.php/tlingkungan>
- Arifelia, D. R., Diansyah, G., & Surbakti, H. (2017). Analisis Kondisi Perairan ditinjau dari Konsentrasi Total Suspended Solid (TSS) dan Sebaran Klorofil-A di Muara Sungai Lumpur, Sumatera Selatan. *Maspari Journal*, 9(2), 95–104.
- Asrini, N. K., Adnyana, I. W. S., & Rai, I. N. (2017). Studi Analisis Kualitas Air di Daerah Aliran Sungai Pakerisan Provinsi Bali. *ECOTROPHIC*, 11(2), 101–107.
- Ayuningtyas, W. C., Yona, D., Julinda, S. H., & Iranawati, F. (2019). Kelimpahan Mikroplastik pada Perairan di Banyuwangi, Gresik, Jawa Timur. *Journal of Fisheries and Marine Research*, 3(1), 41–45.
- Badan Pusat Statistik Indonesia. (2023). *Statistik Indonesia 2023* (Direktorat Diseminasi Statistik, Ed.; Vol. 1101001). BPS-Statistics Indonesia.
- Bagaskara, D., Widada, S., & Rochaddi, B. (2017). Laju Sedimentasi dan Pergeseran Delta di Muara Anak Sungai Porong Siduarjo. *Jurnal Oseanografi*, 6(4), 607–615. <http://ejournal-s1.undip.ac.id/index.php/jose>
- Bahraini, A. (2023). 7 Jenis Plastik: HDPE, LDPE, PP, PET (PETE), PVC. Waste4Change - Waste Management. <https://waste4change.com/blog/tipe-dan-jenis-plastik/>
- Barnes, D. K. A., Galgani, F., Thompson, R. C., & Barlaz, M. (2009). Accumulation and fragmentation of plastic debris in global environments. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 364(1526), 1985–1998.

- BPS D.I. Yogyakarta. (2023). *Berita Resmi Statistik April 2023*.
- Brinson, H. F., & Brinson, L. C. (2008). *An Introduction and Viscoelasticity Polymer Engineering Science*. Springer Science+Business Media, LLC.
- British Plastic Federation. (2021). *Polyethylene (High Density) HDPE*. British Plastic Federation. <https://www.bpf.co.uk/plastipedia/polymers/HDPE.aspx>
- British Plastic Federation. (2022). *Thermoplastics*. British Plastic Federation. <https://www.bpf.co.uk/plastipedia/polymers/polymer-thermoplastics.aspx#polyvinylchloride>
- Cardiff University. (2022, Mei 6). *European farmland could be biggest global reservoir of microplastics, study suggests*. Cardiff News.
- Cleanstreets Westminster. (2020). *Plastic Waste and Pollution [Everything You Need To Know]*. City of Westminster. <https://cleanstreets.westminster.gov.uk/plastic-waste-complete-guide/>
- CNN Indonesia. (2022, Februari 26). *Sampah Plastik 2021 Naik ke 11,6 Juta Ton, KLHK Sindir Belanja Online*. CNN Indonesia. <https://www.cnnindonesia.com/nasional/20220225173203-20-764215/sampah-plastik-2021-naik-ke-116-juta-ton-klhk-sindir-belanja-online>
- De Troyer, N. (2014). *Faculteit Bio-ingenieurswetenschappen Occurrence and distribution of microplastics in the Scheldt river*.
- Dhea, L. A., Kurniawan, A., Ulfa, S. M., & Karimah, K. (2023). Correlation of Microplastic Size Distribution and Water Quality Parameters in the Upstream Brantas River. *Jurnal Penelitian Pendidikan IPA*, 9(2), 520–526.
- DLH Kabupaten Sleman. (2022). *Dokumen Informasi Kinerja Pengelolaan Lingkungan Hidup Daerah Kab. Sleman 2022*.
- DLH Kota Yogyakarta. (2022). *Dokumen Informasi Kinerja Pengelolaan Lingkungan Hidup Daerah Kota Yogyakarta Tahun 2022*. www.jogjakota.go.id
- Ega. (2022). *Pemetaan dan Analisis Dampak Timbulan Sampah Plastik Pertanian menggunakan Sistem Informasi Geografis (SIG) Studi Kasus: Kecamatan Karangdowo, Kabupaten Klaten*. Fakultas Teknik Sipil dan Perencanaan.
- Ermawati, R., & Hartanto, L. (2017). Pemetaan Sumber Pencemar Sungai Lamat Kabupaten Magelang. *Jurnal Sains dan Teknologi Lingkungan*, 9(2), 92–104.
- Faqih, I. (2022). *Identifikasi jenis dan kelimpahan mikroplastik pada air permukaan dan pencernaan ikan wader cakul (Barbodes binotatus) di Sungai Pekalen Kabupaten Probolinggo* [Doctoral Dissertation]. UIN Malang.
- Febriani, I. S., Amin, B., & Fauzi, M. (2020). Distribusi mikroplastik di perairan Pulau Bengkalis Kabupaten Bengkalis Provinsi Riau. *Depik*, 9(3), 386–392.
- Feng, S., Lu, H., Xue, Y., Yan, P., & Sun, T. (2023). Fate, transport, and source of microplastics in the headwaters of the Yangtze River on the Tibetan Plateau. *Journal of Hazardous Materials*, 455.
- Free, C. M., Jensen, O. P., Mason, S. A., Eriksen, M., Williamson, N. J., & Boldgiv, B. (2014). High-levels of microplastic pollution in a large, remote, mountain lake. *Marine Pollution Bulletin*, 85(1), 156–163.
- Gomiero, A., Strafella, P., & Fabi, G. (2018). *From Macroplastic to Microplastic Litter: Occurrence, Composition, Source Identification and Interaction with Aquatic Organisms. Experiences from the Adriatic Sea*. www.intechopen.com

- Government of Canada. (2023). Water Quality in Canadian Rivers. Dalam *Government of Canada - Water Overview*. <https://www.canada.ca/en/environment-climate-change/services/water-overview/publications/water-in-canada.html>
- Hamuna, B., Tanjung, R. H., Maury, H. K., Alianto, dan, & Ilmu Kelautan dan Perikanan, J. (2018). Kajian Kualitas Air Laut dan Indeks Pencemaran Berdasarkan Parameter Fisika-Kimia Di Perairan Distrik Depapre, Jayapura. *Jurnal Ilmu Lingkungan*, 16(1), 35–43.
- Hastuti, A. R., Yulianda, F., & Wardiatno, Y. (2014). Distribusi spasial sampah laut di ekosistem mangrove Pantai Indah Kapuk, Jakarta. *Bonorowo Wetlands*, 4(2), 94–107.
- He, D., Guo, T., Li, J., & Wang, F. (2023). Optimize lettuce washing methods to reduce the risk of microplastics ingestion: The evidence from microplastics residues on the surface of lettuce leaves and in the lettuce washing wastewater. *Science of the Total Environment*, 868.
- He, L., Li, Z., Jia, Q., & Xu, Z. (2023). Soil microplastics pollution in agriculture. *Science*, 379(6632), 547–547.
- Hidden Isochema. (2018, Juni 20). *The Importance of Polymer Characterization*. Hidden Isochema News & Press. <https://hiddenisochema.com/news-press/the-importance-of-polymer-characterization/>
- Jansen, J. A. (2015). *Plastic Failure Through Molecular Degradation*. The Madison Group. <https://madisongroup.com/plastic-failure-through-molecular-degradation/>
- Karuniastuti, N. (2013). Bahaya Plastik terhadap Kesehatan dan Lingkungan. *Forum Teknologi*, 03(1).
- Kim, Y. N., Yoon, J. H., & Kim, K. H. (2020). Microplastic contamination in soil environment - A review. Dalam *Soil Science Annual* (Vol. 71, Nomor 4, hlm. 300–308). Soil Science Society of Poland.
- Kooi, M., Besseling, E., Kroeze, C., van Wezel, A. P., & Koelmans, A. A. (2018). *Erratum to: Modeling the Fate and Transport of Plastic Debris in Freshwaters: Review and Guidance* (hlm. E1–E1).
- Kumar, M., Xiong, X., He, M., Tsang, D. C. W., Gupta, J., Khan, E., Harrad, S., Hou, D., Ok, Y. S., & Bolan, N. S. (2020). Microplastics as pollutants in agricultural soils. Dalam *Environmental Pollution* (Vol. 265). Elsevier Ltd.
- Kurniawan, M. A., Nugroho, S., Adnan, F., & Zulya, F. (2023). Analisis Keterkaitan Kelimpahan Mikroplastik dengan Keberadaan Sampah Plastik di Sungai Mahakam, Kecamatan Muara Kaman. *Jurnal Teknologi Lingkungan UNMUL*, 7(1).
- Lambert, S. (2013). *Environmental Risk of Polymers and their Degradation Products*.
- Lebreton, L., Slat, B., Ferrari, F., Sainte-Rose, B., Aitken, J., Marthouse, R., Hajbane, S., Cunsolo, S., Schwarz, A., Levivier, A., Noble, K., Debeljak, P., Maral, H., Schoeneich-Argent, R., Brambini, R., & Reisser, J. (2018). Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic. *Scientific Reports*, 8(1).

- Lechthaler, S., Esser, V., Schüttrumpf, H., & Stauch, G. (2021). Why analysing microplastics in floodplains matters: application in a sedimentary context. *Science: Processes & Impacts*, 23(1), 117–131.
- Lestari, P. (2021). *Distribusi dan Degradasi Sampah Plastik pada Air, Sedimen, dan Biota di Kali Surabaya* [Doctoral Thesis]. Institut Teknologi Sepuluh Nopember.
- Lippiatt, S., Opfer, S., & Arthur, C. (2013). *Marine Debris Monitoring and Assessment: Recommendations for Monitoring Debris Trends in the*.
- Liro, M., van Emmerik, T., Wyzga, B., Liro, J., & Mikuś, P. (2020). Macroplastic storage and remobilization in rivers. *Water (Switzerland)*, 12(7).
- Liu, J., Liu, H., He, D., Zhang, T., Qu, J., Lv, Y., & Zhang, Y. N. (2022). Comprehensive Effects of Temperature, Salinity, and Current Velocity on the Microplastic Abundance in Offshore Area. *Polish Journal of Environmental Studies*, 31(2), 1727–1736.
- Liu, Y., Liu, Y., Li, Y., Bian, P., Hu, Y., Zhang, J., & Shen, W. (2023). Effects of irrigation on the fate of microplastics in typical agricultural soil and freshwater environments in the upper irrigation area of the Yellow River. *Journal of Hazardous Materials*, 447.
- Mairizki, F. (2017). Analisa Kualitas Air Minum Isi Ulang di Sekitar Kampus Universitas Islam Riau. *Jurnal Katalisator*, 2(1), 9.
- Mateos-Cárdenas, A., van Pelt, F. N. A. M., O'Halloran, J., & Jansen, M. A. K. (2021). Adsorption, uptake and toxicity of micro- and nanoplastics: Effects on terrestrial plants and aquatic macrophytes. Dalam *Environmental Pollution* (Vol. 284). Elsevier Ltd.
- McCabe, D. J. (2010). Rivers and Streams: Life in Flowing Water. *Nature Education Knowledge*, 12(4). <https://www.researchgate.net/publication/236596782>
- Moore, C. (2023). *Plastic pollution | Definition, Sources, Effects, Solutions, & Facts*. Britannica Animals & Nature. <https://www.britannica.com/science/plastic-pollution>
- Mueller, R. J. (2006). Biological degradation of synthetic polyesters-Enzymes as potential catalysts for polyester recycling. *Process Biochemistry*, 41(10), 2124–2128.
- Nerland, I. L., Halsband, C., Allan, I., Thomas, K. V., & Thomas Kristoffer Naes, K. (2014). *Norwegian Institute for Water Research Microplastic Geographical area Oslo Distribution Printed NIVA Client(s) Miljødirektoratet Negative environmental impact*. 47, 55. www.niva.no
- Ningrum, S. O. (2018). Analisis Kualitas Badan Air dan Kualitas Air Sumur di Sekitar Pabrik Gula Rejo Agung Baru Kota Madiun. *Jurnal Kesehatan Lingkungan*, 10(1), 1–12.
- NOAA. (2022). What are microplastics? *US Department of Commerce, National Oceanic and Atmospheric Administration*.
- Nurazizah. (2022). *Identifikasi Keberadaan Mikroplastik pada Unit Pengolahan PDAM Gowa Instalasi Kota Kecamatan Borongloe* [Doctoral Thesis]. Departemen Teknik Lingkungan Fakultas Teknik UNHAS.
- Oceana. (2022). *Canada's National Ban on Single-Use Plastics*. Oceana Canada. <https://oceana.ca/en/our->

- campaigns/plastics/#:~:text=On%20Monday%2C%20June%2020%2C%202022,for%20the%20environment%20and%20oceans%20.
- Peng, G., Zhu, B., Yang, D., Su, L., Shi, H., & Li, D. (2017). Microplastics in sediments of the Changjiang Estuary, China. *Environmental Pollution*, 225, 283–290.
- PIN Online. (2022). *Polymer Characterisation - Techniques, Types & Properties Petro Online*. PIN Petrochemical Chemical & Energy. <https://www.petro-online.com/news/measurement-and-testing/14/breaking-news/polymer-characterisation-techniques-types-properties/58092>
- Plastic Garbage Project. (2018). *Plastic in the daily life*. Plastic Garbage Project. <https://www.plasticgarbageproject.org/en/plastic-life>
- PLASTICS EUROPE. (2022). *Plastics-the Facts 2022*.
- Purwaningrum, P. (2016). Upaya Mengurangi Timbulan Sampah Plastik di Lingkungan. *Jurnal Teknik Lingkungan*, 8(2), 141–147.
- Putra, I. S. (2015). Studi Pengukuran Kecepatan Aliran pada Sungai Pasang Surut. *INFO TEKNIK*, 16(1), 33–46.
- Ramananda, J., Barus, T. A., & Nuryawan, A. (2023). Analysis of Microplastic Abundance in Lake Siombak, Medan Marelan, Medan. *Tunas Geografi*, 12(1), 18.
- Ratner, B. (2009). The correlation coefficient: Its values range between 1/1, or do they. *Journal of Targeting, Measurement and Analysis for Marketing*, 17(2), 139–142.
- Retlaw Industries. (2020). *Types of Plastic Materials Used in Injection Molding*. Retlaw Industries Inc. Hartland, Wisconsin. <https://www.retlawindustries.com/PlasticTypes>
- Riskiana, R., Effendi, H., & Wardiatno, Y. (2020). Kelimpahan dan komposisi sampah plastik di DAS Baturusa Provinsi Kepulauan Bangka Belitung. *Jurnal Pengelolaan Sumberdaya Alam dan Lingkungan (Journal of Natural Resources and Environmental Management)*, 10(4), 650–659.
- Ru, J., Huo, Y., & Yang, Y. (2020). Microbial Degradation and Valorization of Plastic Wastes. Dalam *Frontiers in Microbiology* (Vol. 11). Frontiers Media S.A.
- Sa'diyah, A., & Trihadiningrum, Y. (2020). Kajian Fragmentasi Low Density Polyethylene Akibat Radiasi Sinar Ultraviolet dan Kecepatan Aliran Air. *Jurnal Teknik ITS*, 9(2), 34–40.
- Sari, K. A. (2019). Analisis Kebutuhan Air Irigasi untuk Lahan Persawahan Dusun To'pongo Desa Awo Gading Kecamatan Lamasi. *Jurnal Ilmiah Ilmu-Ilmu Teknik*, 4(1), 47–51.
- Sari, R. N., Istirokhatun, T., & Sudarno. (2014). *Analisis Penentuan Kualitas Air dan Status Mutu Sungai Progo Hulu Kabupaten Temanggung* [Doctoral Dissertation]. Diponegoro University.
- Schober, P., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia and Analgesia*, 126(5), 1763–1768.
- Shah, A. A., Hasan, F., Hameed, A., & Ahmed, S. (2008). Biological degradation of plastics: A comprehensive review. Dalam *Biotechnology Advances* (Vol. 26, Nomor 3, hlm. 246–265).

- Sharma, V. K., Ma, X., Lichtfouse, E., & Robert, D. (2023). Nanoplastics are potentially more dangerous than microplastics. Dalam *Environmental Chemistry Letters* (Vol. 21, Nomor 4, hlm. 1933–1936). Springer Science and Business Media Deutschland GmbH.
- Silva, A. B., Bastos, A. S., Justino, C. I. L., da Costa, J. P., Duarte, A. C., & Rocha-Santos, T. A. P. (2018). Microplastics in the environment: Challenges in analytical chemistry - A review. Dalam *Analytica Chimica Acta* (Vol. 1017, hlm. 1–19). Elsevier B.V.
- Simanjuntak, D. S. (2019). Penurunan Kadar TSS pada Limbah Cair Tahu menggunakan Rumpun Vetiver (*Vetiveria zizanioides* L.). *Ready Star*, 2(1), 70–73.
- Su, W.-F. (2013). *Principles of Polymer Design and Synthesis* (Vol. 82). Springer Berlin. <http://www.springer.com/series/632>
- Susana, T. (2009). Tingkat Keasaman (pH) dan Oksigen Terlarut sebagai Indikator Kualitas Perairan Sekitar Muara Sungai Cisadane. *JTL*, 5(2), 33–39.
- Sutanhaji, A. T., Rahadi, B., & Firdausi, N. T. (2021). Analisis Kelimpahan Mikroplastik Pada Air Permukaan di Sungai Metro, Malang. *Jurnal Sumberdaya Alam dan Lingkungan*, 8(2), 74–84.
- Syamsu, R. F., & Harsanto, P. (2016). Assessment Morfologi Sungai Progo (Studi Kasus : Tengah-Hilir Sungai Progo Yogyakarta). *Seminar Hasil Penelitian Tugas Akhir Mahasiswa Program Studi Teknik Sipil*, 2(2).
- Utami, I., Resdianningsih, K., Rahmawati, S., Dahlan Kampus, A., & Yani, J. A. (2022). Temuan Mikroplastik pada Sedimen Sungai Progo dan Sungai Opak Kabupaten Bantul. *Jurnal Riset Daerah*, XXII(1).
- van Emmerik, T., Mellink, Y., Hauk, R., Waldschläger, K., & Schreyers, L. (2022). Rivers as Plastic Reservoirs. *Frontiers in Water*, 3.
- Vermaire, J. C., Pomeroy, C., Herczegh, S. M., Haggart, O., & Murphy, M. (2017). Microplastic abundance and distribution in the open water and sediment of the Ottawa River, Canada, and its tributaries. *FACETS*, 2(1), 301–314.
- Veronica, C. (2019). *Mikroplastik Dalam Tanah Dapat Merusak Kehidupan Cacing Tanah*. National Geographic Indonesia. <https://nationalgeographic.grid.id/read/131899964/mikroplastik-dalam-tanah-dapat-merusak-kehidupan-cacing-tanah>
- Wang, Q., Zhu, X., Hou, C., Wu, Y., Teng, J., Zhang, C., Tan, H., Shan, E., Zhang, W., & Zhao, J. (2021). Microplastic uptake in commercial fishes from the Bohai Sea, China. *Chemosphere*, 263.
- Wei, X. F., Capezza, A. J., Cui, Y., Li, L., Hakonen, A., Liu, B., & Hedenqvist, M. S. (2022). Millions of microplastics released from a biodegradable polymer during biodegradation/enzymatic hydrolysis. *Water Research*, 211.
- Wulandari, S. Y., Yulianto, B., Radjasa, O. K., Ismunarti, D. H., & Sedjati, S. (2022). Korelasi Konsentrasi Mikroplastik dengan Material Padatan Tersuspensi (MPT) di Perairan Delta Sungai Bodri, Kendal, Jawa Tengah. *Jurnal Kelautan Tropis*, 25(3), 448–455.
- Yamada-Onodera, K., Mukumoto, H., Katsuyaya, Y., Saiganji, A., & Tani, Y. (2001). Degradation of polyethylene by a fungus, *Penicillium simplicissimum* YK. *Polymer Degradation and Stability*, 72(2), 323–327.

- Yani, I. N., Siregar, Y. I., & Amin, B. (2021). Analysis of Types and Abundance of Microplastics in Water and Sediment in Coastal Waters of Pandan District, Central Tapanuli Regency, North Sumatra. *Asian Journal of Aquatic Sciences*, 4(3), 215–220.
- Zhao, Z., Zhao, K., Zhang, T., Xu, Y., Chen, R., Xue, S., Liu, M., Tang, D., Yang, X., & Giessen, V. (2022). Irrigation-facilitated low-density polyethylene microplastic vertical transport along soil profile: An empirical model developed by column experiment. *Ecotoxicology and Environmental Safety*, 247.
- Zhen, Y., Wang, L., Sun, H., & Liu, C. (2023). Prediction of microplastic abundance in surface water of the ocean and influencing factors based on ensemble learning. *Environmental Pollution*, 331.