

DAFTAR PUSTAKA

- A.O. Nosova and M.V. Uspenskaya. Ecotoxicological effects and detection features of polyvinyl chloride microplastics in soils: A review. *Environmental Advances* 13 (2023) 100437. <https://doi.org/10.1016/j.envadv.2023.100437>
- Ammala, A. (2011). *Environmental degradation of plastics*. *Polymer Degradation and Stability*, 96(4), 389–406. <https://doi.org/10.1016/j.polymdegradstab.2010.12.007>
- Andrian, Supriadi, & Marpaung, P. (2014). Pengaruh Ketinggian Tempat dan Kemiringan terhadap Produksi Karet (*Hevea brasiliensis* Muell. Arg.) di Kebun Hapesong PTPN III Tapanuli Selatan. *E-Journal Agroekoteknologi*, 2(3), 981–989.
- Araujo, C. F., Nolasco, M. M., Ribeiro, A. M. P., & Ribeiro-Claro, P. J. A. (2018). Identification of microplastics using Raman and FTIR spectroscopy: A review. *Journal of Raman Spectroscopy*, 49(5), 648–661. Akses: <https://doi.org/10.1002/jrs.5389>
- Arifin, M. (2018). Kajian Sifat Fisik Tanah dan Berbagai Penggunaan Lahan Dalam Hubungannya Dengan Pendugaan Erosi Tanah. *Jurnal Pertanian MAPETA*, 12(2), 111-114.
- Badan Informasi Geospasial (BIG). 2005. *Peta Rupa Bumi Indonesia (RBI) Skala 1:60.000*. BIG, Agam.
- Bintang, R., Suyarto, R., & Kesumadewi, A. A. I. (2016). Kajian Status Kerusakan Tanah pada Lahan Pertanian di Kecamatan Denpasar. *E Journal Agroteknologi Tropika*, 5(1), 1–10.
- Bodîrlău (2009). “Composites with PVC & hardwood,” *BioResources* 4(4), 1285-1304. 1304
- BPS Agam (2024). *Kecamatan Canduang Dalam Angka Canduang District in Figures 2024* Volume 15, 2024 Katalog/Catalogue: 1102001.1307071 ISSN: 3031-1470
- BPS Kabupaten Agam. (2016). *Agam Dalam Angka. BPS Provinsi Sumatera Barat. Sumatera Barat Dalam Angka*.
- Celina, M. (2013). Degradation of PVC in outdoor weathering – FTIR evidence and mechanisms. *Polymer Degradation and Stability*, 98(3), 316–325. Akses: <https://doi.org/10.1016/j.polymdegradstab.2012.11.015>
- Coates, J. (2000). *Interpretation of Infrared Spectra: A Practical Approach*. In R. Meyers (Ed.), *Encyclopedia of Analytical Chemistry*. Wiley. Akses: <https://doi.org/10.1002/9780470027318.a5606>
- Curren, E., Kuwahara, V. S., Yoshida, T., & Leong, S. C. Y. (2021). Marine microplastics in the ASEAN region: A review of the current state of knowledge. *Environmental Pollution*, 288(1). <https://doi.org/https://doi.org/10.1016/j.envpol.2021.117776>

- Herviyanti, H., Tanjung, E.T.A.P., Rezki, D., Maulana, A., Darusman, D., Darfis, I., Purwanto, B.H. and Prasetyo, T.B. 2024. The implication of microplastic contamination on chemical properties of Inceptisols in the horticultural production center of Canduang, Agam, West Sumatra, Indonesia. *Journal of Degraded and Mining Lands Management* 12(1):6545-6561, doi:10.15243/jdmlm.2024.121.6545.
- Huang, Y., Liu, Q., Jia, W., Yan, C., & Wang, J. (2020). Agricultural Plastic Mulching as A Source of Microplastics in The Terrestrial Environment. *Environmental Pollution*, 260, 114096.
- Jung, M. R., Horgen, F. D., Orski, S. V., Rodriguez, V., Beers, K. L., Balazs, G. H., Jones, T. T., Work, T. M., Brignac, K. C., Royer, S. J., Hyrenbach, K. D., Jensen, B. A., & Lynch, J. M. (2018). Validation of ATR FTIR to identify polymers of plastic marine debris, including those ingested by marine organisms. *Marine Pollution Bulletin*, 127: 704-716.
- Käppler, A., Fischer, M., Scholz-Böttcher, B., Fischer, D., & Eichhorn, K.-J. (2016). *Analysis of polyolefins in the presence of humic substances using ATR-FTIR and Raman spectroscopy*. *Environmental Science & Technology*, 50(20), 11292–11300.
- Kim, Y. R., Lee, S. H., & Kim, J. H. (2022). *Structural characterization of polypropylene composites using FTIR and thermal analysis*. *Journal of Applied Polymer Science*, 139(10), e52034.
- Kumari, A., Chaudhary, D. R., & Jha, B. (2019). Destabilization of polyethylene and polyvinylchloride structure by marine bacterial strain. *Environmental Science and Pollution Research*, 26(2), 15071516. <https://doi.org/10.1007/s11356018-3465-1>
- L., Liang, R., Zhang, C., Zhang, R., Wang, H., & Wang, L. (2024). Coupling polyethylene microplastics with other pollutants: *Exploring their combined effects on plant health and technologies for mitigating toxicity*. <i>Science
- Lesmana, D., Fauzi, M., & Sujatmoko, B. (2021). Analisis Kemiringan Daerah Aliran Sungai Kampar dengan Titik Keluaran Waduk PLTA Koto Panjang. *Jurnal Online Mahasiswa Fakultas Teknik*, 8 (2) Juli s/d Desember 2021. *of The Total Environment*<i>, 176657. <https://doi.org/10.1016/j.scitotenv.2024.176657>
- Li, Y., Yang, G., Zhang, Y., Lei, X., Ma, X., Xing, X. (2024). Microplastics in the agricultural soils: Pollution behavior and subsequent effects. <i>Land Degradation&Development</i><https://doi.org/10.1002/ldr.5231></div>
- Lusher, A., Hollman, P., & Mendoza, J. (2017). Microplastics in fisheries and aquaculture: status of knowledge on their occurrence and implications for aquatic organisms and food safety. *In FAO Fisheries and Aquaculture Technical Paper 615*. <https://doi.org/978-92-5-109882-0>
- Machado, A.A.S. (2018). *Microplastics as an emerging threat to terrestrial ecosystems*. *Global Change Biology*, 24(4), 1405–1416. <https://doi.org/10.1111/gcb.14020>

- Marrone, A.; La Russa, M.F.; Randazzo, L.; La Russa, D.; Cellini, E.; Pellegrino, (2021) D. Microplastics in the Center of Mediterranean: Comparison of the Two Calabrian Coasts and Distribution from Coastal Areas to the Open Sea. *Int. J. Environ. Res. Public Health*, 18, 10712.
- Martono. (2004). Pengaruh Intensitas Hujan dan Kemiringan Terhadap Laju Kehilangan Tanah pada Tanah Regosol Kelabu [Diponegoro Lmu Tanah Dan University]. http://core.ac.uk/download/files/379/117_13338.pdf
- Masura, J., Baker, J., Foster, G., Arthur, C., & Herring, C. (2015). Laboratory Methods for the Analysis of Microplastics in the Marine Environment: Recommendations for Quantifying Synthetic Particles in Waters and Sediments. *NOAA Technical Memorandum NOS OR & R 48*.
- Nguyen, M. K., Lin, C., Hung, N. T. Q., Vo, D. V. N., Nguyen, K. N., Thuy, B. T. P., et al. (2022). Occurrence and distribution of microplastics in peatland areas: a case study in Long an province of the Mekong Delta, Vietnam. *Sci. Total Environ.* 844, 157066. Doi:10.1016/j.scitotenv.2022.157066
- Osman AI, Hosny M, Eltaweil AS, Omar S, Elgarahy AM, Farghali M, Yap PS, Wu YS, Nagandran S, Batumalaie K, Gopinath SCB, John OD, Sekar M, Saikia T, Karunanithi P, Hatta MHM, Akinyede KA. Microplastic sources, formation, toxicity and remediation: a review. *Environ Chem Lett.* 2023 Apr 4:1-41. doi: 10.1007/s10311-023-01593-3. Epub ahead of print. PMID: 37362012; PMCID: PMC10072287.
- Panipak Boonsong, Achara Ussawarujikulchai, Benjaphorn Prapagdee, Wanwisa Pansak (2025) Contamination of microplastics in greenhouse soil subjected to plastic mulching, *Environmental Technology & Innovation*, Volume 37, 103991, ISSN2352-1864 [.\(https://www.sciencedirect.com/science/article/pii/S235218642400467X\)](https://www.sciencedirect.com/science/article/pii/S235218642400467X)
- Piehl, S., Leibner, A., Löder, M. G. J., et al. (2018). *Identification and quantification of macro- and microplastics on an agricultural farmland*. Scientific Reports, 8, 17950. <https://doi.org/10.1038/s41598-018-36172-y>
- Ramos, L., Berenstein, G., Hughes, E. A., Zalts, A., & Montserrat, J. M. (2015). Polyethylene film incorporation into the horticultural soil of small periurban production units in Argentina. *Science of The Total Environment*, 523, 74-81. <https://doi.org/10.1016/j.scitotenv.2015.03.142>
- Retno Wahyu Murti. (2019). Kajian status kerusakan tanah pada lahan kebun dan tegalan untuk produksi biomassa di Kecamatan Pitu Kabupaten Ngawi. Universitas Sebelas Maret.
- Rillig, M.C., et al. (2019). *Microplastic effects on plants and soil*. Trends in Plant Science, 24(8), 743–753. <https://doi.org/10.1016/j.tplants.2019.07.008>
- Sebayang, N. U. W., Pratama, F., & Lubis, N. (2024). Physicochemical characteristics of Inceptisol in highland Date Palm (*Phoenix dactylifera* L.) Tiganderket District, Karo Regency after application of snake fruit waste compost. 1417, 012040. <https://doi.org/10.1088/1755-1315/1417/1/012040>

- Sharma, B., & Chattopadhyay, S. (2008). *Handbook of Plastics Analysis*. CRC Press. Akses Google Books: <https://books.google.com/books?id=FXwtZ4m0guoC>
- Shujun, L., et al. (2021). *Characteristic peaks of polyethylene and polypropylene by FTIR spectroscopy*. *Polymer Testing*, 93, 106878
- Six, J., Elliott, E. T., & Paustian, K. (2000). *Soil structure and soil organic matter II. A normalized stability index and the effect of mineralogy*. *Soil Science Society of America Journal*, 64(3), 1042–1049.
- Soil Survey Staff. 2014. *Keys to Soil Taxonomy*. 12nd edition. USDA Natural Resources Conservation Service. Washington DC. 346p.
- Stuart, B. (2004). *Infrared Spectroscopy: Fundamentals and Applications*. John Wiley & Sons. <https://doi.org/10.1002/0470011149>
- Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Bandung: Alfabeta.
- Suyanto, & Wawan. (2017). Pengaruh Kemiringan Lahan dan *Mucuna bracteata* terhadap Aliran permukaan dan Erosi di PT Perkebunan Nusantara V Kebun Lubuk Dalam. *Jom Faperta*, 4(1), 1–15.
- Tyas, D., & Hermawan, B. (2010). Hubungan antara Beberapa Karakteristik Fisik Lahan dan Produksi Kelapa Sawit Relations between Physical Characteristics of Land and Palm Oil Production. *Akta Agrosia*, 13(1), 35–39. [http://repository.unib.ac.id/76/1/Akta_13\(1\)_35-39.pdf](http://repository.unib.ac.id/76/1/Akta_13(1)_35-39.pdf)
- Wang J, Li J, Liu S, Li H, Chen X, Peng C, Zhang P, Liu X. Distinct microplastic distributions in soils of different land-use types: A case study of Chinese farmlands. *Environ Pollut*. 2021 Jan 15;269:116199. doi: 10.1016/j.envpol.2020.116199. Epub 2020 Dec 1. PMID: 33288296.
- Workman, J., & Weyer, L. (2012). *Practical Guide to Interpretive Near-Infrared Spectroscopy*. CRC Press. <https://doi.org/10.1201/b11894>
- Xinmiao Wang, Qi Feng, Lei Yang, Min Li, Fangkai Zhao, Jianfeng Tang, Qingwei Bu, Yanjie Zhang, Liding Chen, Effect of land use on occurrence and spatial variability of soil microplastics in agricultural watershed, *Ecological Frontiers*, 2025,, ISSN2950-5097, (<https://www.sciencedirect.com/science/article/pii/S2950509724001424>)
- Xu, B., Liu, F., Cryder, Z., Huang, D., Lu, Z., He, Y., Wang, H., Lu, Z., Brookes, P., Tang, C., Gan, J., & xu, J. (2022). Microplastics in the soil environment: Occurrence, risks, interactions and fate – A review. *Critical Reviews in Environmental Science and Technology*, <https://doi.org/10.1080/10643389.2019.1694822>
- Yang, L., Zhang, Y., Kang, S., Wang, Z., and Wu, C. (2023). Microplastics in soil: a review on methods, occurrence, sources, and potential risk. *Sci. Total Environ*. 780, 146546. [Doi:10.1016/j.scitotenv.2021.146546](https://doi.org/10.1016/j.scitotenv.2021.146546)
- Zhang, D., Ng, E. L., Hu, W., Wang, H., Galaviz, P., Yang, H., Sun, W., Li, C., Ma, X., Fu, B., ... & Liu, H. (2020). Plastic Pollution in Croplands Threatens Long Term Food Security. *Global Change Biology*, 26, 3356-3367.

- Zhang, H. (2020). Transport and fate of microplastics in terrestrial environments. *Environmental Science & Technology*, 54(7), 4079–4095.
- Zhang, K., Hamidian, A. H., Tubić, A., Zhang, Y., Fang, J. K. H., Wu, C., & Lam, P. K. S. (2021). Understanding Plastic Degradation and Microplastic Formation in the Environment: A Review. *Environmental Pollution*, 274, 116554.
- Zhang, Y. Li, L. Jiang, X. Chen, Y. Zhao, W. Shi, Z. Xing (2024) From organic fertilizer to the soils: what happens to the microplastics? A critical review. *Sci. Total Environ.*, 919 (2024), Article 170217
- Zubris, K. A. V., & Richards, B. K. (2005). *Synthetic fibers as an indicator of land application of sludge*. *Environmental Pollution*, 138, 201–211. <https://doi.org/10.1016/j.envpol.2005.04.013>

