

DAFTAR PUSTAKA

- Amalina, F., Razak, A., Krishnan, S., Sulaiman, H., Zularisam, A. W., & Nasrullah, M. 2022. Biochar production techniques utilizing biomass waste-derived materials and environmental applications. *Journal of Hazardous Materials Advances*, 7, 100134.
- Amoloye, M. A., Kareem, S. A., & Adeniyi, A. G. 2023. Comparative Study of Biochars from the Retort Co-Carbonization of Corn Cob and Polyethylene Wastes. *Journal Malaysian of Catalysis*, 7, 6–12.
- Asri, Dian, Ganjar Samudro, S. S. 2017. Pengaruh kadar air terhadap proses pengomposan sampah organik dengan metode takakura. *Jurnal Teknik Mesin*, 6(2), 124–128.
- Awasthi, M. K., Pandey, A. K., Bundela, P. S., & Wong, J. W. 2020. Co-composting of organik fraction of municipal solid waste mixed with different bulking agents. *Bioresource Technology*, 188, 172-181.
- Awasthi, M. K., Duan, Y., Awasthi, S. K., Liu, T., Chen, H., Pandey, A., & Taherzadeh, M. J. (2020). Emerging applications of biochar: Improving pig manure composting and attenuation of heavy metal mobility in mature compost. *Journal of hazardous materials*, 389, 122116.
- Awasthi, M. K., Wang, Q., Huang, H., Ren, X., Lahori, A. H., Mahar, A., & Zhang, Z. 2016. Influence of biochar amendment on greenhouse gas emission and biochemical transformation of nitrogen in agricultural soil. *Journal of Environmental Management*, 168, 132-139.
- Ayumi, I. D. E., Lutfi, M., & Nugroho, W. A. 2017. Efektivitas tipe pengomposan (konvensional , aerasi , dan rak segitiga) terhadap sifat fisik dan kimia kompos dari sludge biogas dan Serbuk Gergaji. *Jurnal Keteknikan Pertanian Tropis Dan Biosistem*, 5(3), 265–272.
- Badan Litbang SDLP Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian. 2009. *Analisis kimia tanah, tanaman, air, dan pupuk*. Badan Penelitian dan Pengembangan Pertanian, Departemen Pertanian, Bogor.
- Badan Pusat Statistik Indonesia. 2023. Populasi Sapi Perah Menurut Kecamatan dan Jenis Kelamin di Kabupaten Banyumas (ekor). (Online). <https://bps.go.id>. Diakses 05 Februari 2025

- Bernal, M.P., Albuquerque, J.A., & Moral, R. 2019. Composting of Animal Manures and Chemical Criteria for Compost Maturity Assessment. *Journal Bioresource Technology*, 285, 121-133.
- Camps-Arbestain, M., Amonette, J. E., Singh, B., Wang, T., & Schmidt, H. P. 2015. A biochar classification system and associated test methods. In *Biochar for environmental management . Journal Gcb Bioenergy*, 7(3), 512-526.
- Cerda, A., Artola, A., Font, X., Barrena, R., Gea, T., & Sánchez, A. 2018. Composting of food wastes: Status and challenges. *Journal Bioresource technology*, 248, 57-67.
- Chen, M., Li, Y., Liu, H., & Wang, Y. 2018. Effects of Turning Frequency on Composting Process of Cattle Manure: Focusing on GHG Emissions and Bacterial Community Succession. *Journal of Environmental Management*, 228, 312-321.
- Chen, X., Wu, J., Liu, H., & Zhang, L. 2022. Impact of Biochar Addition on Composting Process and Product Quality: A review. *Waste Management & Research*, 40(2), 145-158.
- Dewilda dan Listya. 2017. Pengaruh Komposisi Bahan Baku Kompos (Sampah Organik Pasar, Ampas Tahu, dan Rumen Sapi) terhadap Kualitas dan Kuantitas Kompos. *Jurnal Teknik Lingkungan UNAND*, 14 (1) : 52-61.
- Fan, Z., Zhou, X., Peng, Z., Wan, S., Gao, Z. F., Deng, S., & Chen, X. 2023. Co-pyrolysis technology for enhancing the functionality of sewage sludge biochar and immobilizing heavy metals. *Journal Chemosphere*, 317, 137929.
- Guo, R., Li, G., Jiang, T., Schuchardt, F., Chen, T., Zhao, Y., & Shen, Y. 2012. Effect of aeration rate, C/N ratio and moisture content on the stability and maturity of compost. *Journal Bioresource Technology*, 112, 171-178.
- Guo, X., Liu, H., Wu, S., & Zhang, X. 2021. Effects of Biochar on the Transformation of Organic Matter and Nutrients During Composting: A Review. *Bioresource Technology*, 319, 124161.
- Harlis, Upik Yelianti, Retni S Budiarti, N. H. 2019. Pelatihan pembuatan kompos organik metode keranjang takakura sebagai solusi penanganan sampah di lingkungan kost mahasiswa 1. *Jurnal Pengabdian Masyarakat*, 1(1), 1–8.

- Hidayat, B., Sebayang, N. U. W., & Utami, A. 2022. Utilization of Biomass in The Form Biochar and Compost on Soil Properties. *Jurnal Online Pertanian Tropik*, 9(3), 182-191.
- Indriani, Y. H. 2001. *Membuat kompos secara kilat*. Jakarta; Penebar swadaya.
- Ingham, E. R. 2005. The importance of soil microbial communities in composting. *Journal Composting for Sustainable Agriculture*, 1(1), 1-10.
- Iskandar, T., & Rofiatin, U. 2017. Karakter biochar berdasarkan jenis biomasa dan parameter proses pyrolisis. *Jurnal Teknik Kimia*, 12(1), 28–34.
- Jiang, Z., Li, J., Jiang, D., Gao, Y., Chen, Y., Wang, W., ... & Zhang, Y. 2020. Removal of atrazine by biochar-supported zero-valent iron catalyzed persulfate oxidation: reactivity, radical production and transformation pathway. *Journal Environmental Research*, 184, 109260.
- Kaswinarni, F., & Nugraha, A. A. S. 2020. Kadar Fosfor, Kalium dan Sifat Fisik Pupuk Kompos Sampah Organik Pasar dengan Penambahan Starter EM4, Kotoran Sapi dan Kotoran Ayam. *Titian Ilmu: Jurnal Ilmiah Multi Sciences*, 12(1), 1-6.
- Kalamdhad, A. S., & Kazmi, A. A. 2009. Effects of turning frequency on compost stability and some chemical characteristics in a rotary drum composter. *Journal Chemosphere*, 74(10), 1327-1334.
- Khoerudin, I., 2019. Pengaruh pemberian beberapa jenis dekomposer terhadap kualitas kimia kompos kembang bulan (*Tithonia diversifolia*). *Skripsi*. Universitas Islam Negeri Sultan Syarif Kasim. Pekanbaru.
- Khurniyati, M. I., Nurhayati, A., Pamungkas, P. P., & Rohim, A. 2022. Pendampingan masyarakat di desa panditan dalam memanfaatkan kotoran sapi menjadi pupuk bokashi. *LOGISTA-Jurnal Ilmiah Pengabdian kepada Masyarakat*, 6(2), 91-95.
- Krisnawan, K. A., Tika, I. W., & Madrini, I. A. G. B. 2018. Analisis dinamika suhu pada proses pengomposan jerami dicampur kotoran ayam dengan perlakuan kadar air. *Jurnal Beta*, 6(1), 25–32.
- Kumar, M., Ou, Y. L., & Lin, J. G. 2020. Co-composting of Green Waste and Food Waste at Low C/N Ratio. *Journal Waste Management*, 95, 471-481.

- Kumar, M., Suhag, R., Hasan, M., Dhumal, S., Radha, Pandiselvam, R., ... & Kennedy, J. F. 2023. Black soybean (*Glycine max* (L.) Merr.): paving the way toward new nutraceutical. *Critical Reviews in Food Science and Nutrition*, 63(23), 6208-6234.
- Lehmann, J., Jeffery, S., & Kern, J. 2019. *Biochar for Environmental Management: Science, Technology and Implementation*. Routledge Publisher, London.
- Li, Y., Feng, H., Chen, J., Lu, J., Wu, W., Liu, X., ... & Siddique, K. H. 2022. Biochar incorporation increases winter wheat (*Triticum aestivum* L.) production with significantly improving soil enzyme activities at jointing stage. *Journal Catena*, 211, 105979.
- Liu, Y., Zhang, H., & Chen, M. 2020. Effects of Turning Frequency on Cattle Manure Composting Process. *Waste Management*, 102, 15-23.
- Liu, N., Zhou, J., Han, L., Ma, S., Sun, X., & Huang, G. 2017. Role and multi-scale characterization of bamboo biochar during poultry manure aerobik composting. *Bioresource Technology*, 5(1), 123-130
- Liu, Q., He, X., Wang, K., & Li, D. 2023. Biochar Drives Humus Formation during Composting by Regulating The Specialized Metabolic Features Of Microbiome. *Chemical Engineering Journal*, 4(2), 444-458.
- Mironov, V., Zhukov, V., Efremova, K., & Brinton, W. F. 2024. Enhancing aerobik composting of food waste by adding hydrolytically active microorganisms. *Frontiers in Microbiology*, 15, 1487165.
- Mautuka, Z.A., Maifa, A. Karbeka, M. 2021. Pemanfaatan biochar tongkol jagung guna perbaikan sifat kimia tanah lahan kering. *Jurnal Ilmiah Wahana Pendidikan*, 8(1): 201–208.
- Murbandono, L. 2000. *Membuat kompos* (revisi). Jakarta; Penebar Swadaya.
- Muzammil, M. H. 2023. Potensi Pemanfaatan Limbah Kotoran Ternak Sapi Sebagai Pupuk Kompos Ramah Lingkungan. *Jurnal Pendidikan, Sains Dan Teknologi*, 2(2), 992-996.
- Nurdiana, J., Meicahayanti, I., Fera Indriana, H., Studi, P., & Lingkungan, T. 2017. Pengolahan sampah organik domestik melalui windrow composting. *Prosiding Seminar Nasional Teknologi IV*, 1(1), 41–46.
- Nurhayati. 2018. Pengaruh pemberian kompos sebagai bahan pembenah tanah terhadap P tersedia tanah ultisol. *Jurnal Wahana Inovasi*, 7(1), 128–130.

- Onwosi, C. O., Igbokwe, V. C., Odimba, J. N., Eke, I. E., Nwankwoala, M. O., Iroh, I. N., & Ezeogu, L. I. 2017. Composting technology in waste stabilization: On the methods, challenges and future prospects. *Journal of environmental management*, 190, 140-157.
- Pandebesie, E. S., Rayuanti, D., & Artanti, E. 2019. Factors Affecting Composting Process and Quality: A Review. *IOP Conference Series: Earth and Environmental Science*, 245(1), 129.
- Purba, J. H., Parmila, I. P., & Sari, K. K. 2018. Pengaruh pupuk kandang sapi dan jarak tanam terhadap pertumbuhan dan hasil kedelai (*Glycine max* L. Merrill) varietas edamame. *Agro Bali: Agricultural Journal*, 1 (2): 69-81.
- Purnomo, E. A., Sutrisno, E., & Sumiyati, S. 2017. Pengaruh variasi C/N rasio terhadap produksi kompos dan kandungan kalium (K), pospat (P) dari batang pisang dengan kombinasi kotoran sapi dalam sistem vermicomposting. *Jurnal Teknik Lingkungan*. 6 (2). 2-15
- Rahman, M. T. 2023. Rancang bangun alat pengukur intensitas curah hujan otomatis menggunakan energi solar panel berbasis IoT. *ALINIER: Journal of Artificial Intelligence & Applications*, 4 (2): 105-112.
- Rakhmawati, D. Y., Dangga, S. A., & Laela, N. 2019. Pemanfaatan kotoran sapi menjadi pupuk organik. *Jurnal Abdikarya: Jurnal Karya Pengabdian Dosen dan Mahasiswa*, 3(1), 89.
- Rizkysandy, I. M., Kristalisasi, E. N., & Syah, R. F. 2023. Uji penurunan nilai C/N rasio dan kecepatan proses pengomposan tandan kosong kelapa sawit pada beberapa komposisi kotoran sapi. *Jurnal Pertanian Khairun*, 2(1), 147–150.
- Rusdiana, A. Nurwahyunani, dan A. M. 2021. Analisis peran petani dalam konservasi lahan pertanian berbasis kearifan lokal. *Indonesian Journal of Conservation*, 10(1), 42–47.
- Setyorini, R. Saraswati, & E. K. A. 2019. *Kompos, Pupuk organik dan pupuk hayati* 2(3). 11–40.
- Sitorus, B Susanto, dan D. H. 2011. Kriteria dan klasifikasi tingkat degradasi Lahan di Lahan Kering. *Jurnal Tanah Dan Iklim*, 1(34), 66–83.
- Situmeang, Y. P. 2020. Utilization of Biochar and Compost for Improving Soil Properties and Growth of Corn. *Journal of Tropical Soils*, 25(1), 1-10.

- Subula, M., Głodek, A., Kwiatkowski, M., & Cybulska, K. 2022. *The influence of different methods of composting on the physico-chemical parameters of the final compost*. *Ecological Engineering*, 176, 106534.
- Sumirat, U. dan A. Solehudin. 2009. Nitrous Oksida (N₂O) dan Metana (CH₄) sebagai Gas Rumah Kaca. *Jurnal TORSI*. 8(2). 12-34.
- Sukmawati. 2020. Bahan organik menjanjikan dari biochar tongkol jagung, cangkang dan tandan kosong kelapa sawit berdasarkan sifat kimia. *Jurnal Agrolantae*, 9(2), 82–94.
- Sutrisno, E., & Priyambada, I. B. 2019. Dengan metoda fermentasi menggunakan bioaktivator starbio di desa ujung – ujung kecamatan pabelan. *Pasopati*, 1(2), 2–5.
- Karyono, T dan Laksono, J. 2019. Kualitas fisik kompos feses sapi potong dan kulit kopi dengan penambahan aktivator mol bongkol pisang dan em4. *Jurnal Peternakan Indonesia*, 21(2), 154–162.
- Wang, L., Yang, F., & Liu, H. 2021. Nutrient Conservation During Cattle Manure Composting: Effects of Management Practices. *Journal of Environmental Management*. 278, 111551.
- Wardana, L. A., Lukman, N., Mukmin, M., Sahbandi, M., Bakti, M. S., Amalia, D. W., & Nababan, C. S. 2021. Pemanfaatan limbah organik (kotoran sapi) menjadi biogas dan pupuk kompos. *Jurnal Pengabdian Magister Pendidikan IPA*, 4(1).
- Widarti, B. N., Syafrudin, S., & Hadiwidodo, M. 2021. Study of Composting Process Parameters on Various Raw Materials: A Review. *E3S Web of Conferences*, 202, 03010.
- Widarti, B. N., Wardhini, W. K., & Sarwono, E. 2015. Pengaruh C/N rasio bahan baku pada pembuatan kompos dari kubis dan kulit pisang. *Jurnal Integrasi Proses*, 5(2).
- Wijaya, A., Butarbutar, T., & Hartati, W. 2018. Biochar yang diproduksi dengan tungku drum tertutup retort. *Hutan Topical*, 2(1), 49–58.
- Wiratmana, I. P. A., Sukadana, I. G. K., Ngurah, I. G., Tenaya, P., & Belakang, L. 2012. Studi ksperimental pengaruh variasi bahan kering terhadap produksi dan nilai kalor biogas kotoran sapi. *Jurnal Energi Dan Manufaktur*, 5(1), 22–32.

- Wu, H., Lai, C., Zeng, G., Liang, J., Chen, J., Xu, J., Dai, J., Li, X., Liu, J., Chen, M., Lu, L., Hu, L., & Wan, J. 2016. Critical reviews in biotechnology the interactions of composting and biochar and their implications for soil amendment and pollution remediation : a review. *Critical Reviews in Biotechnology*, 7(2), 345-353.
- Yuniwati, Mumi., Frendy, A. P. 2012. Optimasi kondisi proses pembuatan kompos dari sampah organik dengan cara fermentasi menggunakan EM4. *Jurnal Teknologi*, 5(2), 172–181.
- Xiao, R., Awasthi, M. K., Li, R., Park, J., Pensky, S. M., Wang, Q., ... & Zhang, Z. 2017. Recent developments in biochar utilization as an additive in organik solid waste composting: A review. *Bioresource Technology*, 246, 203-213.
- Xiu, L., Gu, W., Sun, Y., Wu, D., Wang, Y., Zhang, H., ... & Chen, W. 2023. The fate and supply capacity of potassium in biochar used in agriculture. *Science of the Total Environment*, 902, 165969.
- Zhang, J., Lü, F., Shao, L., & He, P. 2014. The use of biochar-amended composting to improve the humification and degradation of sewage sludge. *Bioresource Technology*, 168, 252–258.
- Zhang, L., Sun, X., & Tian, Y. 2023. Enhancement of Nutrients Retention During Composting by Biochar Addition: A review. *Environmental Science and Pollution Research*, 30(5), 12789-12802.
- Zhang, X., Sun, Y., & Li, W. 2022. Assessment of Compost Maturity in Animal Manure Composting: A review. *Bioresource Technology*, 344, 126241.
- Zheng, Y., Yu, C., & Fu, L. 2023. Biochar-based materials for electroanalytical applications: A review. *Green Analytical Chemistry*, 100081.