

## DAFTAR PUSTAKA

- Akash, M. S. H., dan K. Rehman. 2019. Gas Chromatography. Essentials of pharmaceutical Analysis
- Akhdariato, S., dan M. N. Rofiq. 2017. Estimasi Emisi Gas Metana dari Fermentasi Enterik Ternak Ruminansia Menggunakan Metode Tier-1 di Indonesia. *Jurnal Teknologi Lingkungan* 18(1): 1-8
- Alvarado, A. C., B. Z. Predicala, D. A. Asis. 2015. Mixing nanoparticles with swine manure to reduce hydrogen sulfide and ammonia emissions. *Journal Environment Science Technology* 12: 893 - 904
- Agyarko-Mintah, E., Cowie, A., Van Zwieten, L., Singh, B.P., Smillie, R., Harden, S., Fornasier, F., 2017. Biochar lowers ammonia emission and improves nitrogen retention in poultry litter composting. *Waste Manage.* 61, 129–137.
- Arriaga, H., M. Viguria, D. M. López, P. Merino. 2017. Ammonia and greenhouse gases losses from mechanically turned cattle manure windrows: A regional composting network. *Journal of Environmental Management*, 203, 557–563.
- Bhaisare, S. H., Walke, D., S Ganguly, D. S., Wankar, V., Student, P., IOFS Visiting Faculty, R., & Professor, A. 2017. The Organic Compost Machine and Factors Effecting Performance of Composting: A Review. *International Journal of Engineering Science and Computing*, 7(12): 15866.
- Cesare, F. D., E. D. Mattia, S. Pantalei, E. Zampetti, V. Vinciguerra, F. Canganella, A. Macagnano. 2011. Use of electronic nose technology to measure soil microbial activity through biogenic volatile organic compounds and gases release. *Soil Biology and Biochemistry* 43(10): 2094–2107
- Cavalli, D., M. Corti, D. Baronchelli, L. Bechini, P. M. Gallina. 2017. CO<sub>2</sub> emissions and mineral nitrogen dynamics following application to soil of undigested liquid cattle manure and digestates. 308: 26-35
- Chen, H., S. K. Awasthi, T. Liu, Y. Duan, X. Ren, Z. Zhang, A. Pandey, M. K. Awasthi. 2020. Effects of microbial culture and chicken manure biochar on compost maturity and greenhouse gas emissions during chicken manure composting. *Journal of Hazardous Materials*, 389(December), 121908
- Czekała, W., K. Malińska, R. Cáceres, D. Janczak, J. Dach, A. Lewicki. 2016. Co-composting of poultry manure mixtures amended with biochar - The effect of biochar on temperature and C-CO<sub>2</sub> emission. *Bioresource Technology*, 200, 921–927.
- De Cesare, F., E. Di Mattia, S. Pantalei, E. Zampetti, V. Vinciguerra, F. Canganella, A. Macagnano. 2011. Use of electronic nose technology to measure soil microbial activity through biogenic volatile organic compounds and gases release. *Soil Biology and Biochemistry* 43(10): 2094–2107.
- Djaja, W. 2008. Langkah jitu membuat kompos dari kotoran ternak dan sampah. Agromedia pustaka
- Djuarnani, N. 2005. Cara Cepat Membuat Kompos. Agromedia Pustaka Jakarta
- Dorji, U., T. Pobkrut, S. Siyang, T. Chaiyasit, P. Choden, T. Kerdcharoen. 2017. Development of real time smart electronic nose system for monitoring organic abundance in soil. ECTI-CON 2017 - 2017 14th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology. 163–166.

- Fahmi, A. H., A. W. Samsuri, H. Jol, D. Singh. 2018. Physical modification of biochar to expose the inner pores and their functional groups to enhance lead adsorption. *Royal Society of Chemistry* 8: 38270 – 38280
- Fatmawati, F., F. M. Warganegara, M. Puspitasari. 2016. Identifikasi bakteri potensial penghasil enzim amilase, selulase, xilanase dan lipase pada fase termofilik kompos manur sapi. *Jurnal Kesehatan Bakti Tunas Husada* Volume 16(1): 69 – 76
- Fidel, R. B., D. A. Laird, K. A. Spokas. 2018. Sorption of ammonium and nitrate to biochars is electrostatic and pH-dependent. *Scientific Reports*. 1–10.
- Gaur, A. C. 1985. *A Manual of Rural Composting*. FAO. United Nation.
- Graves RE, Hattemer GM, Stettler D, Krider JN, Dana C. 2000. *National Engineering Handbook*. United States: Department of Agriculture.
- Guo, H., J. Gu, X. Wang, J. Yu, M. Nasir, K. Zhang, W. Sun. 2020. Microbial driven reduction of N<sub>2</sub>O and NH<sub>3</sub> emissions during composting: Effects of bamboo charcoal and bamboo vinegar. *Journal of Hazardous Materials* 390: 121292.
- Hassouna, M., T. Elin, P. Cellier, V. Colomb, J. P. Cohan, C. Decuq, M. Delabuis, N. Edouard, S. Espagnol, M. E. 2016. Measuring emissions from livestock farming: greenhouse gases, ammonia and nitrogen oxides. *Inra Science & Impact*
- Hastuti, S. M., G. Samudro, S. Sumiyati. 2017. Pengaruh kadar air terhadap hasil pengomposan sampah organik dengan metode composter tub. *Jurnal Teknik Mesin* 6(2): 114-117
- Hernández, T., G. Masciandaro, J. Moreno, C. García. 2006. Changes in organic matter composition during composting of two digested sewage sludges. *Waste Management*, 26(12), 1370–1376
- Hidayat, S., A. Rusman, T. Julian, K. Triyana, A. Veloso, A. Peres. 2019. Electronic Nose Coupled with Linear and Nonlinear Supervised Learning Methods for Rapid Discriminating Quality Grades of Superior Java Cocoa Beans. *International Journal of Intelligent Engineering and Systems*, 12(6), 167–176
- Hidayat, S. N., K. Triyana, I. Fauzan, T. Julian. 2019. The Electronic Nose Coupled with Chemometric Tools for Discriminating the Quality of Black Tea Samples In Situ. *Chemosensors*, 7(3): 29.
- Hidayat, S. N., T. R. Nuringtyas, K. Triyana. 2018. Electronic Nose Coupled with Chemometrics for Monitoring of Tempeh Fermentation Process. 2018 4th International Conference on Science and Technology (ICST), 1, 1–6.
- Huda, S. dan W. Wikanta. 2016. Pemanfaatan Limbah Kotoran Sapi Menjadi Pupuk Organik Sebagai Upaya Mendukung Usaha Peternakan Sapi Potong di Kelompok Tani Ternak Mandiri Jaya Desa Moropelang Kecamatan Babat Kabupaten Lamongan. *AKSIOLOGIYA: Jurnal Pengabdian Kepada Masyarakat*. 1(1): 26.
- Kaikiti, K. M. Stylianou, A. Agapiou. 2020. Use of biochar for the sorption of volatile organic compounds (VOCs) emitted from cattle manure. *Environmental Science and Pollution Research*
- Karakaya, D., O. Ulucan, M. Turkan. 2020. Electronic Nose and Its Applications: A Survey. *International Journal of Automation and Computing*, 17(2): 179–209

- Kaya, E. 2018. Pengaruh kompos jerami dan pupuk npk terhadap N-tersedia tanah, serapan-N, pertumbuhan, dan hasil padi sawah (*Oryza sativa* L). *Agrologia*, 2(1): 43–50
- Kögel-Knabner I. 2002 The macromolecular organic composition of plant and microbial residues as inputs to soil organic matter. *Soil Biology and Biochemistry* 34: 139–162.
- Leff, J. W. dan N. Fierer. 2008. Volatile organic compound emissions from soil and litter samples. *Soil Biology and Biochemistry* 40 : 1629 – 1636
- Lehman, J., dan S. Joseph. 2009. *Biochar for Environmental Management: Science and Technology*. Earthscan, London.
- Li, Y., Li, W., Wu, C., & Wang, K. 2013. New insights into the interactions between carbon dioxide and ammonia emissions during sewage sludge composting. *Bioresource Technology*. 136: 385–393.
- Li, Y., Y. Liu, X. Yong, X. Wu, H. Jia, J. W. C. Wong, H. Wu, J. Zhou. 2020. Odor emission and microbial community succession during biogas residue composting covered with a molecular membrane. *Bioresource Technology* 297
- Liao, W., Liu Y., Liu C., Chen S. 2004. Optimizing dilute acid hydrolysis of hemicellulose in a nitrogen-rich cellulosic material-dairy manure. *Bioresour technol* 94(1): 33-41
- Lin, L., F. Xu, X. Ge, Y. Li. 2019. Biological treatment of organic materials for energy and nutrients production—Anaerobic digestion and composting. In Ohio. *Advances in Bioenergy*.
- López, R., I. Giráldez, A. Palma, M. J. Díaz. 2016. Assessment of compost maturity by using an electronic nose. *Waste Management* 48: 174 – 180
- Lu, P., S. Wu, Z. Dai, Z. Su. 2014. Determination of odour emission at compost plant based on electronic nose and GIS. *Nongye Gongcheng Xuebao/Transactions of the Chinese Society of Agricultural Engineering* 30(17): 235-242
- Manka'abusi, D., C. Steiner, V. Haering, A. H. Abubakari, B. Marschner, A. Buerkert. 2018. Gaseous carbon and nitrogen losses during composting of carbonized and un-carbonized agricultural residues in northern Ghana. *Journal of Plant Nutrition and Soil Science*, 181(6): 886–893.
- Mao, H., H. Zhang, Q. Fu, M. Zhong, R. Li, B. Zhai, Z. Wang, L. Zhou. 2019. *Bioresource Technology* Effects of four additives in pig manure composting on greenhouse gas emission reduction and bacterial community change. *Bioresource Technology* 292: 121896.
- McEntegart, C. M., W. R. Penrose, S. Strathmann, J. R. Stetter. 2000. Detection and discrimination of coliform bacteria with gas sensor arrays. *Sens. Actuators B* 70: 170-176.
- Moshoeshe, M., M. S. N. Tabbiruka, V. Obuseng. 2017. A Review of the Chemistry, Structure, Properties and Applications of Zeolites. *American Journal of Materials Science*, 2017(5), 196–221.
- Nakasaki, K., A. Ohtaki, H. Takano. 2001. Effect of bulking agent on the reduction of NH<sub>3</sub> emissions during thermophilic composting of night-soil sludge. *Waste Management & Research* 19: 301 – 307
- Natpinit, P., R. Anuwattana, T. Ditkaew, T. Suppinunt., 2016. Application of Rice Stubble Synthesized Zeolite for Greenhouse Gas Reduction. 38(2), 23–31.

- Nawansih, O., T. Hanum, F. Nurainy. 2008. Kajian penggunaan inokulum pada proses pengomposan bagasse. Prosiding Seminar Nasional Sains dan Teknologi
- Nie, E., G. Zheng, Z. Shao, J. Yang, T. Chen. 2018. Emission characteristics and health risk assessment of volatile organic compounds produced during municipal solid waste composting. *Waste Management* 79: 188–195
- Noviani, P. I., S. Slamet, A. Citraresmini. 2018. Kontribusi Kompos Jerami-Biochar Dalam Peningkatan P-Tersedia, Jumlah Populasi BPF dan Hasil Padi Sawah. *Jurnal Ilmiah Aplikasi Isotop dan Radiasi* 14(1): 47 - 58
- Oonincx, D. G. A. B., J. V. Itterbeeck, M. J. W. Heetkamp, H. V. D. Brand, J. J. A. V. Loon, A. V. Huis. 2010. An Exploration on Greenhouse Gas and Ammonia Production by Insect Species Suitabel for Animal or Human Consumption entomophagy and encironment 5(2): 1-7
- Oppermann, S. 2018. Compost. In *Veer Ecology*.
- Peñuelas, J. D. Asensio, D. Tholl, K. Wenke, M. Rosenkranz, B. Piechulla, J.P. Schnitzler. 2014. Biogenic volatile emissions from the soil. *Plant, Cell and Environment* 37: 1866 – 1891
- Purba, J. H., P. S. Wahyuni, I. Febryan. 2019. Pupuk hayati terhadap pertumbuhan dan hasil petsai (*Brassica chinensis* L.) Kandungan pupuk kandang yang kaya bakal calon tempat penelitian melihat nilai akan mampu memberikan asupan pada porositas , penyimpanan dan penyediaan air dekomposisi organik. 2(2): 77–88.
- Putro, B. P., G. Samudro, W. D. Nugraha. 2016. Pengaruh penambahan pupuk npk dalam pengomposan sampah organik secara aerobik menjadi kompos matang dan stabil diperkaya. *Jurnal Teknologi Lingkungan* 5(2): 1- 10
- Qin, X., G. Shen, Z. Wang, C. Guo, Y. Liu, Z. Lei, Z. Zhang. 2013. Co-composting of livestock manure with rice straw: Characterization and establishment of maturity evaluation system. *Waste management* 34: 530 – 535
- Raveendran, K., A. Ganesh, K. C. Khilar. 1995. Influence of mineral matter on biomass pyrolysis characteristics. *Fuel* 74, 1812-1822.
- Raza, W., X. Mei, Z. Wei, N. Ling, J. Yuan, J., Wang, Q. Huang, Q. Shen. 2017. Profiling of soil volatile organic compounds after long-term application of inorganic, organic and organic-inorganic mixed fertilizers and their effect on plant growth. *Science of the Total Environment*, 607–608, 326–338
- Rodríguez, M. D., M. Ruiz-Montoya, I. Giraldez, R. López, E. Madejón, M. J. Díaz. 2012. Use of electronic nose and GC-MS in detection and monitoring some VOC. *Athmosphereic Environment* 51: 278 – 285
- Romain, A. C., D. Godefroid, J. Nicolas. 2005. Monitoring the exhaust air of a compost pile with an e-nose and comparison with GC–MS data. *Sensors and Actuators* 106: 317 – 324
- Said-Pullicino, D., F. G. Erriquens, G. Gigliotti. 2007. Changes in the chemical characteristics of water-extractable organic matter during composting and their influence on compost stability and maturity. *Bioresource Technology* 98(9): 1822–1831
- Sánchez-Monedero, M. A., M. Sánchez-García, J. A. Alburquerque, M. L. Cayuela. 2019. Biochar reduces volatile organic compounds generated during chicken manure composting. *Bioresource Technology* 288: 121584.
- Sari, N. K. 2010. *Analisa Instrumentasi*. Klaten. Yayasan Humaniora.

- Setiyo, Y. 2007. Kajian tingkat pencemaran udara oleh gas  $\text{NH}_3$  dan  $\text{H}_2\text{S}$  pada proses pengomposan secara aerob. *Agrotekno* 13(1): 25 – 28
- Seufert, V., N. Ramankutty, T. Mayerhofer. 2017. What is this thing called organic ? – How organic farming is codified in regulations. *Food Policy* 68: 10–20
- Sholihah, S. M. dan M. A. Wahyuningrum. 2016. Penggunaan Bioaktivator Kelinci Pada Pengomposan Limbah Padat Tahu. *Jurnal Ilmiah Respati Pertanian* 2(9): 650 – 658
- Sozana, K., H. Hamdan, H. Mat. 2003. Methane adsorption characteristic dependency on zeolite methane adsorption characteristic dependency on zeolite structures and properties \*. January.
- Suprihatin, N. S. Indrasti, M. Romli. Potensi penurunan emisi gas rumah kaca melalui pengomposan sampah. *Jurnal Teknologi Industri Pertanian* 18(1): 53 – 59
- Trazzi, P. A., J. J. Leahy, M. H. B. Hayes, W. Kwapinski. 2016. Adsorption and desorption of phosphate on biochars. *Journal of Environmental Chemical Engineering* 4: 37 – 46
- Trivana, L., A. Y. Pradhana, A. P. Manambangtua. 2017. Optimalisasi waktu pengomposan pupuk kandang dari kotoran kambing dan debu sabut kelapa dengan bioaktivator EM4. *Jurnal Sains dan Teknologi Lingkungan* 9(1): 16-24
- Turan, N. G., A. Akdemir, O. N. Ergun. 2009. Removal of volatile organic compounds by natural materials during composting of poultry litter. *Bioresource Technology* 100: 798-803
- Wang X., G. Yang, Y. Feng, G. Ren, X. Huan. 2012. Optimizing feeding composition and carbon–nitrogen ratios for improved methane yield during anaerobic co-digestion of dairy, chicken manure and wheat straw. *Technology* 120: 78 – 83
- Wang ,L. R., J. J. Zhang, Z. Shen, F. Zhang, G., Qin, R., Li, X. R. Xiao. 2012. Nutrient transformations during composting of pig manure with bentonite. *Bioresource Technology*, 121: 362–368
- Wang, J., Z. Hu, X. Xu, X. Jiang, B. Zheng, X. Liu, X. Pan, P. Kardol. 2014. Emissions of ammonia and greenhouse gases during combined pre-composting and vermicomposting of duck manure. *Waste Management* 34(8): 1546–1552.
- Wasthi, M. K., Q. Wang, X. Ren, J. Zhao, H. Huang, S. K. Awasthi A. H. Lahori, R. Li, L. Zhou, Z. Zhang. 2016. Role of biochar amendment in mitigation of nitrogen loss and greenhouse gas emission during sewage sludge composting. *Bioresource Technology* 219: 270-280
- Wheatley, R., C. Hackett, A. Bruce, A. Kundzewicz. 1997. Effect of substrate composition on production of volatile organic compounds from *Trichoderma* spp. Inhibitory to wood decay fungi. *Int. Biodeterior. Biodegrad* 39: 199–205.
- Widhiyanuriyawan, D. dan N. Hamidi. 2013. Variasi Temperatur Pemanasan Zeolite alam-NaOH Untuk Pemurnian Biogas. *Jurnal Energi dan Manufaktur* 6(1): 1 - 94
- Wijayanti, N., W. D. Nugraha, Syafrudin. 2013. Pengomposan sludge hasil pengolahan limbah cair pt. indofood cbp dengan penambahan lumpur aktif



dan EM4 dengan variasi kulit bawang dan bawang goreng. *Jurnal Teknik Lingkungan* 2(3)

- Zhang, L., G. Zeng, H. Dong, Y. Chen, J. Zhang, M. Yan, Y. Zhu, Y. Yuan, Y. Xie, Z. Huang. 2017. The impact of silver nanoparticles on the co-composting of sewage sludge and agricultural waste: Evolutions of organic matter and nitrogen. *Bioresource Technology*, 230: 132–139
- Zhang, W. M., C. X. Yu, X. J. Wang, L. Hai. 2020. Increased abundance of nitrogen transforming bacteria by higher C/N ratio reduces the total losses of N and C in chicken manure and corn stover mix composting. *Bioresource Technology* 297: 122410.
- Zhang, J., Q. Sui, K. Li, M. Chen, J. Tong, L. Qi, Y. Wei. 2016. Influence of natural zeolite and nitrification inhibitor on organics degradation and nitrogen transformation during sludge composting. *Environmental Science and Pollution Research* 23(2): 1324–1334.