

DAFTAR PUSTAKA

- Acs, F., Horvath, A., Breuer, H., dan Rubel, F., 2010, Effect of Soil Hydraulic Parameters On The Local Convective Precipitation, *Meteorologische Zeitschrift*, 19(2), 143–153. Available at: <https://doi.org/10.1127/0941-2948/2010/0435>.
- Adelekan, B.A., dan Abegunde, K.D., 2011, Heavy Metals Contaminations of Soil and Groundwater at Automobile Mechanic Village in Ibadan, Nigeria, *Int. J. of Phy. Sci.*, 6(5), 1045–1058. Available at: <https://doi.org/10.5897/IJPS10.495>.
- Ahmad, I., Hayat, S., Ahmad, A., Inam, A., and Samiullah, I., 2005, Effect of Heavy Metal on Survival of Certain Groups of Indigenous Soil Microbial Population, *J. Appl. Sci. Environ. Manag.*, 9(1), 115–121.
- Ai P., Jin K., Alengebawy A., Elsayed M., Meng L., Chen M., dan Ran Y., 2020, Effect of Application of Different Biogas Fertilizer on Eggplant Production: Analysis of Fertilizer Value and Risk Assessment, *Environ. Technol. Innov.*, 19(3), 101019. Available at: <https://doi.org/10.1016/j.eti.2020.101019>.
- Ajah, D.N., Agboeze, E., Ihedioha, J.N., Chukwudi-Madu, E., dan Chime, C.C., 2022, Levels of Zinc (Zn), Copper (Cu), Iron (Fe), and Cadmium (Cd) in Soil, Rice Stalk, and *Oryza Sativa* Grain in Ishiagu Rice Field, Ebonyi State, Nigeria; Human Health Risk, *J. Nig. Soc. Phys. Sci.*, 4(4), 1 – 11. Available at: <https://doi.org/10.46481/jnsps.2022.891>.
- Al Khateeb, W., dan Al-Qwasemeh, H., 2014, Cadmium, Copper and Zinc Toxicity Effects on Growth, Proline Content and Genetic Stability of *Solanum Nigrum* L., *Physiol Mol Biol Plants*, 20(1), 31–39. Available at: <https://doi.org/10.1007/s12298-013-0211-5>.
- Alam, R., Ahmed, Z., dan Howladar, M.F., 2020, Evaluation of Heavy Metal Contamination in Water, Soil and Plant Around the Open Landfill Site Mogla Bazar in Sylhet, Bangladesh, *Groundwater Sustain. Dev.*, 10, 100311. Available at: <https://doi.org/10.1016/j.gsd.2019.100311>.
- Ali, H., Khan, E., and Ilahi, I., 2019, Environmental Chemistry and Ecotoxicology of Hazardous Heavy Metals: Environmental Persistence, Toxicity, and Bioaccumulation, *J. Chem.*, 6730305. Available at: <https://doi.org/10.1155/2019/6730305>.
- Anonim., 2019, Persyaratan Teknis Minimal Pupuk Organik, Pupuk Hayati, dan Pembenah Tanah', *Peraturan Menteri Pertanian*, 43, 1-18. Available at: <http://psp.pertanian.go.id/index.php/page/publikasi/418>
- Anonim, 2021, Pedoman Perlindungan dan Pengelolaan Lingkungan Hidup, *Peraturan Pemerintah Republik Indonesia*, 22, 1-374. Available at: <http://www.jdih.setjen.kemendagri.go.id/>

- Atafar, Z., Mesdaghinia, A., Nouri, J., Homae, M., Yunesian, M., Ahmadimoghaddam, M., dan Mahvi, A.H., 2010, Effect of Fertilizer Application on Soil Heavy Metal Concentration, *Environ. Monit. Assess.*, 160 (1-4), 83 – 89. Available at: <https://doi.org/10.1007/s10661-008-0659-x>.
- Azeez, J.O., Hassan, O.A., and Egunjobi, P.O., 2011, Soil Contamination at Dumpsites: Implication of Soil Heavy Metals Distribution in Municipal Solid Waste Disposal System: a Case Study of Abeokuta, Southwestern Nigeria, *Soil and Sediment Contamination*, 20(4), 370-386. Available at: <https://doi.org/10.1080/15320383.2011.571312>.
- Bahaa-Eldin, E.A.R., Yusoff, I., Rahim, S.A., Wan Z.W.Y., dan Abdul G.M. R., 2008, Heavy Metal Contamination of Soil Be-neath a Waste Disposal Site at Dengkil, Selangor, Malaysia, *Soil & Sediment Contamination*, 17(5), 449-466. Available at: <https://doi.org/10.1080/15320380802304342>.
- Bar-Tal, A., and Pressaman, E., 1996, Root Restriction and Potassium and Calcium Solutions Concentration Affect Dry-matter Production, Cation Uptake and Blossom-end Rot in Greenhouse Tomato, *J. American Soc. Horti. Sci.*, 121(4), 649-655. Available at: <https://doi.org/10.21273/jashs.121.4.649>.
- Benson, N.U., Anake, W.U., and Etesin, U.M., 2014, Trace Metals Levels in Inorganic Fertilizers Commercially Available in Nigeria, *J. Sci. Res. Rep.*, 3(4), 610-620. Available at: <https://doi.org/10.9734/jsrr/2014/7465>.
- Chen, F., Chen X., Zhu, F., dan Sun, Q., 2019, Study on The Factors Affecting The Spatial Distribution of Heavy Metal Elements, *IOP Conf. Ser.: Earth Environ. Sci.*, 330(4), 042013. Available at: <https://doi.org/10.1088/1755-1315/330/4/042013>.
- Choi, C., Su, Y., and Chang, C., 2013, Effects of Fluid Flow on the Growth and Assembly of ZnO Nanocrystals in a Continuous Flow Microreactor, *CrystEngComm*, 15(17), 3326–3333. Available at: <https://doi.org/10.1039/c3ce26699k>.
- Costantini, E.A.C., Antichi, D., Almagro, M., Hedlund, K., Sarno, G., and Virto, I., 2020, Local Adaptation Strategies to Increase or Maintain Soil Organic Carbon Content Under Arable Farming in Europe: Inspirational Ideas for Setting Operational Groups Within the European Innovation Partnership, *J. Rural Stu.*, 79, 102 – 115. Available at: <https://doi.org/10.1016/j.jrurstud.2020.08.005>.
- Dagne, B.B., dan Endale, T., 2019, Levels of Some Selected Metals (Fe, Cu and Zn) in Selected Vegetables and Soil Around Eastern Industry Zone, Central Ethiopia, *Afr. J. Agric. Res.*, 14(2), 78 - 91. Available at: <https://doi.org/10.5897/ajar2018.13615>.

- Deng, M., Kuo, D.T.F., Wu, Q., Zhang, Y., Liu, X., and Liu S., 2018, Organophosphorus Flame Retardants and Heavy Metals in Municipal Landfill Leachate Treatment System in Guangzhou, China, *Environ. Pollut.*, 236, 137–145. Available at: <https://doi.org/10.1016/j.envpol.2018.01.042>.
- Devez, A., Gomeza, E., Gilbin, R., Elbaz-Poulichet, F., Persin, F., Andrieux, P., dan Casellas, C., 2005, Assessment of Copper Bioavailability and Toxicity in Vineyard Runoff Waters by DPASV and Algal Bioassay, *Science of The Total Environment*, 348(1-3): 82-92. Available at: <https://doi.org/10.1016/j.scitotenv.2005.01.004>.
- El-Mathana, M.E., Mostafa, N.G., Galal, M.M., Elawwad, A., 2021, Assessment and Simulation of a Solid Waste Dumpsite Impact on the Surrounding Water Resources: a Case Study in Abu Zaabal, Egypt, *Heliyon*, 7(11), e08421. Available at: <https://doi.org/10.1016/j.heliyon.2021.e08421>.
- Essien, J.P., Inam, E.D., Ikpe D.I., Udofia, G.E., and Benson, N.U., 2019, Ecotoxicological Status and Risk Assessment of Heavy Metals in Municipal Solid Wastes Dumpsite Impacted Soil in Nigeria, *Environmental Nanotechnology, Monitoring & Management*, 11, 100215. Available at: <https://doi.org/10.1016/j.enmm.2019.100215>.
- Eviati dan Sulaeman, 2009, *Analisis Kimia Tanah, Tanaman, Air, dan Pupuk*, Balai Penelitian Tanah, Bogor . Available at: https://doi.org/10.30965/9783657766277_011.
- Fassler, E., Robinson, B.H., Stauffer, W., Gupta, S.K., Papritz, A., dan Schulin, R., 2010, Phytomanagement of Metal-contaminated Agricultural Land Using Sunflower, Maize and Tobacco, *Agriculture. Ecosystems & Environ.*, 136(1-2), 49–58. Available at: <https://doi.org/10.1016/j.agee.2009.11.007>.
- Fijalkowski, K., Kacprzak, M., Grobelak, A., dan Placek, A., 2012, The Influence of Thiuram On The Mobility of Heavy Metals In Soils, *Archives of Environmental Protection*, 34(3), 83–90.
- Garcia, M., Daverede, C., Gallego, P., and Toumi, M., 1999, Effect of Various Potassium-Calcium Ratios on Cation Nutrition of Grape Grown Hydroponically, *J. Plant Nutr.*, 22(3), 417–425. Available at: <https://doi.org/10.1080/01904169909365639>.
- Gong, Q., Jun, D., Xiang, Y., Wang, Q., dan Yang, L., 2008, Calculating Pollution Indices by Heavy Metals in Ecological Geochemistry Assessment and a Case Study in Parks of Beijing, *J. China Univ. Geo.*, 19 (3), 230–241.
- Guan, Y., Shao, C., dan Ju, M., 2014, Heavy Metal Contamination Assessment and Partition for Industrial and Mining Gathering Areas, *Int. J. Environ. Res. Public Health*, 11(7), 7286-7303. Available at: <https://doi.org/10.3390/ijerph110707286>.
- Guevara-Riba, A., Sahuquillo, A., Rubio, R., Rauret, G., 2004, Assessment of

- Metal Mobility in Dredged Harbour Sediments From Barcelona, Spain, *Science of the Total Environment*, 321 (1-3), 241-255. Available at: <https://doi.org/10.1016/j.scitotenv.2003.08.021>.
- Guo, T., Lou, C., Zhai, W., Tang, X., Hashmi, M.Z., Murtaza, R., Li, Y., Liu, X., dan Xu, J., 2018, Increased Occurrence of Heavy Metals, Antibiotics and Resistance Genes in Surface Soil After Long-term Application of Manure, *Sci. Total Environ.*, 635, 995–1003. Available at: <https://doi.org/10.1016/j.scitotenv.2018.04.194>.
- Haby, V.A., Russelle, M.P., dan Skogley, E.O., 1990, *Soil Testing for Potassium, Calcium and Magnesium*. In: R. L. Westerman ed. *Soil Testing and Plant Analysis*, third ed., Madison, Wisconsin.
- Hakanso, L., 1980, An Ecological Risk Index for Aquatic Pollution Control—A Sedimentological Approach, *J. Water Research*, 14(8), 975–1001. Available at: [https://doi.org/10.1016/0043-1354\(80\)90143-8](https://doi.org/10.1016/0043-1354(80)90143-8).
- Hanafi, M.M., dan Sjiaola, J., 1998, Cadmium and Zinc in Acid Tropical Soil: Soil Physicochemical Properties Effect on Their Adsorption, *Comm. in Soil Sci. and Plant Anal.*, 29(11-14), 1919-1931. Available at: <https://doi.org/10.1080/00103629809370083>.
- Hang, X., Wang, H., Zhou, J., Ma, C., Du, C., and Chen, X., 2009, Risk Assessment of Potentially Toxic Element Pollution in Soils and Rice (*Oryza Sativa*) in a Typical Area of the Yangtze River Delta, *Environ. Pollut.*, 157(8-9), 2542–2549. Available at: <https://doi.org/10.1016/j.envpol.2009.03.002>.
- Havlin, J.L., Beaton, J.D., Tisdale, S.L., and Nelson, W.L., 2005, *Soil Fertility and Fertilizers: an Introduction to Nutrient Management*, Pearson Prentice Hall, New Jersey.
- Hinojosa, M.B., Carreira, J.A., Ruiz, R.G., and Dick, R.P., 2004, Soil Moisture Pre-treatment Effects on Enzyme Activities as Indicators of Heavy metal Contaminated and Reclaimed Soils, *Soil Biology & Biochemistry*, 36(10), 1559–1568. Available at: <https://doi.org/10.1016/j.soilbio.2004.07.003>.
- Hou, S., Zheng, N., Tang, L., Ji, X., dan Li, Y., 2019, Effect of Soil pH and Organic Matter Content on Heavy Metals Availability in Maize (*Zea mays* L.) Rhizospheric Soil of Non-ferrous Metals Smelting Area, *Environ. Monit. Assess.*, 191(10), 1 – 10. Available at: <https://doi.org/10.1007/s10661-019-7793-5>.
- Kamal, A.K.I., Islam, R., Hassan, M., Ahmed, F., Rahman, M.A.T.M.T., and Moniruzzaman, M., 2016, Bioaccumulation of Trace Metals in Selected Plants within Amin Bazar Landfill Site, Dhaka, Bangladesh, *Environ. Process.*, 3(1), 179–194. Available at: <https://doi.org/10.1007/s40710-016-0123-9>.

- Khoshgoftarmanesh, A.H., dan Kalbasi, M., Effect of Municipal Waste Leachate on Soil Properties and Growth and Yield of Rice, *Commun. Soil Sci. Pknt anal.*, 33(13&14), 2011–2020. Available at: <https://doi.org/10.1081/CSS-120005745>.
- L Lal, R., 2016, Soil Health and Carbon Management. *Food Energy Secur.*, 5(4), 212–222. Available at: <https://doi.org/10.1002/fes3.96>.
- Lal, R., Negassa, W., and Lorenz, K., 2015, Carbon Sequestration in Soil, *Curr. Opin. Environ. Sustain.*, 15(C), 79–86. Available at: <https://doi.org/10.1016/j.cosust.2015.09.002>.
- Li, H., Lin, L., Ye, S., Li, H., Fan, J., 2017, Assessment of Nutrient and Heavy Metal Contamination In The Seawater and Sediment of Yalujiang Estuary, *Marine Pollut. Bulletin*, 117(1–2), 499–506. Available at: <https://doi.org/10.1016/j.marpolbul.2017.01.069>.
- Li, Z., Ma, Z., Kuijp, T.J.V.D., Yuan, Z., Huang, L., 2014, A Review of Soil Heavy Metal Pollution From Mines In China: Pollution and Health Risk Assessment, *Sci. Total Environ.*, 468–469, 843–853. Available at: <https://doi.org/10.1016/j.scitotenv.2013.08.090>.
- Liu, C., Cui, J., Jiang, G., Chen, X., Wang, L., dan Fang, C., 2013, Soil Heavy Metal Pollution Assessment Near the Largest Landfill of China, *Soil and Sediment Contamination*, 22(4), 390–403. Available at: <https://doi.org/10.1080/15320383.2013.733447>.
- Liu, R., Wang, M.E., Chen, W.P., and Peng, C., 2016, Spatial Pattern of Heavy Metals Accumulation Risk in Urban Soils of Beijing and Its Influencing Factors, *Environ. Pollut.*, 210, 174–181. Available at: <https://doi.org/10.1016/j.envpol.2015.11.044>.
- Lock, K., dan Janssen, C., 2001, Test Designs to Assess the Influence of Soil Characteristics on the Toxicity of Copper and Lead to the Oligochaete *Enchytraeus albidus*, *Ecotoxicol.*, 10(3), 137–144. Available at: <https://doi.org/10.1023/A:1016633725412>.
- Mahmood, T., 2010, Phytoextraction of Heavy Metals—The Process and Scope for Remediation of Contaminated Soils, *Soil & Environment*, 29(2), 91–109.
- McBride, M.B., 1994, *Environmental Chemistry of Soils*, Oxford University Press, New York.
- Merante, P., Dibari, C., Ferrise, R., Sánchez, B., Iglesias, A., Lesschen, J.P., Kuikman, P., Yeluripati, J., Smith, P., and Bindi, M., 2017, Adopting Soil Organic Carbon Management Practices in Soils of Varying Quality: Implications and Perspectives in Europe, *Soil Tillage Res.*, 165, 95–106. Available at: <https://doi.org/10.1016/j.still.2016.08.001>.
- Mermut, A.R., Jain, J.C., Song, L., Kerrich, R., Kozak, L., and Jana, S., 1996, Trace Element concentrations of Selected Soils and Fertilizers in

- Saskatchewan, Canada, *J. Enviro. Qual.*, 25(4), 845-853. Available at: <https://doi.org/10.2134/jeq1996.00472425002500040028x>.
- Muyassar, M., dan Budianta, W., 2021, Assessment of Heavy Metal Contamination in Soil around Piyungan Landfill, Yogyakarta, Indonesia, *Journal of Applied Geology*, 6(2), 128–135. Available at: <https://doi.org/10.22146/jag.65651>.
- Nicholls, A.M., Mal, T.K., 2003 Effects of Lead and Copper Exposure on Growth of an Invasive Weed, *Lythrum Salicaria* L, *Ohio J. Sci.*, 103(5), 129–133.
- Nyika, J.M., Onyari, E.K., Dinka M.O., and Mishra, S.B., 2019, Heavy Metal Pollution and Mobility in Soils within a Landfill Vicinity: A South African Case Study, *Orient. J. Chem.*, 35(4), 1286-1296. Available at: <https://doi.org/10.13005/ojc/350406>.
- Parthipan, T., dan Ravi, V., 2016, Productivity of Transplanted Rice as Influenced by Weed Control Methods, *Afr. J. Agric. Res.*, 11(16), 1445–1449. Available at: <https://doi.org/10.5897/ajar2013.7217>.
- Purnamasari, L., Rostaman, T., Widowati, L.R., and Anggria, L., 2021, Comparison of Appropriate Cation Exchange Capacity (CEC) Extraction Methods for Soils from Several Regions of Indonesia, *IOP Conf. Ser.: Earth Environ. Sci.*, 648(1), 012209. Available at: <https://doi.org/10.1088/1755-1315/648/1/012209>.
- R Ran, J., Wang, D., Wang, C., Gang, Z., and Zhang, H., 2016, Heavy Metal Contents, Distribution, and Prediction in a Regional Soil-wheat System, *Sci. Total Environ.*, 544, 422–431. Available at: <https://doi.org/10.1016/j.scitotenv.2015.11.105>.
- R Ruiz, F., 2001, Trace Metals in Estuarine Sediments From the Southwestern Spanish Coast, *J. Marine Pollution Bulletin*, 42(6), 482–490. Available at: [https://doi.org/10.1016/S0025-326X\(00\)00192-2](https://doi.org/10.1016/S0025-326X(00)00192-2).
- Salt, D.E., Blaylock, V., Kumar, P.B.A.N., Dushenkov, U., Ensley, B.D., Chet, L., and Raskin, I., 1995, Phytoremediation: A Novel Strategy For the Removal of Toxic Metal From The Environment Using Plants, *Biotechnology*, 13, 468–474.
- Shen, F., Mao, L., Sun, R., Du, J., Tan, Z., dan Ding, M., 2019, Contamination Evaluation and Source Identification of Heavy Metals in the Sediments from the Lishui River Watershed, Southern China, *Int. J. Environ. Res. Public Health*, 16(3), 1 –14. Available at: <https://doi.org/10.3390/ijerph16030336>.
- S Solgi, E., dan Parmah, J., 2015, Analysis and Assessment of Nickel and Chromium Pollution in Soils Around Baghejar Chromite Mine of Sabzevar Ophiolite Belt, Northeastern Iran, *Trans. Nonferrous Met. Soc. China*, 25(7), 2380 – 2387. Available at: <https://doi.org/10.1016/S1003->

6326(15)63853-5.

- Tomasic, Z.T., Jurisic, A., dan Kisic, I., 2013, Cation Exchange Capacity of Dominant Soil Types in the Republic of Croatia, *J. Cen. Euro. Agri.*, 14(3), 84-98. Available at: <https://doi.org/10.5513/JCEA01/14.3.1286>.
- Voogt, W., 1988, The Growth of Beefsteak Tomato as Affected by K/Ca Ratios in the Nutrient Solution, *Acta Horticulturae*, 22, 155-165. Available at: <https://doi.org/10.17660/actahortic.1988.222.18>.
- Wang, A. jun *et al.* (2017) 'Assessment of heavy metal pollution in surficial sediments from a tropical river-estuary-shelf system: A case study of Kelantan River, Malaysia', *Marine Pollution Bulletin*, 125(1-2), pp. 492-500. Available at: <https://doi.org/10.1016/j.marpolbul.2017.08.010>.
- Wang, H.F., Wu, Q.M., Hu W.Y., 2018, Using Multi-medium Factors Analysis to Assess Heavy Metal Health Risks Along the Yangtze River in Nanjing, Southeast China, *Environmental pollution*, 243, 1047-1056. Available at: <https://doi.org/10.1016/j.envpol.2018.09.036>.
- Wang, J., Liu, R., Zhang, P., Yu, W., Shen, Z., dan Feng, C., 2014, Spatial Variation, Environmental Assessment And Source Identification of Heavy Metals in Sediments of The Yangtze River Estuary, *Marine Pollution Bulletin*, 87(1), 364-373. Available at: <https://doi.org/10.1016/j.marpolbul.2014.07.048>.
- Wang, Q., Li, Y., and Klassen, W., 2005, Determination of Cation Exchange Capacity on Low to Highly Calcareous Soils, *Communications in Soil Science and Plant Analysis*, 36(11-12), 1479-1498. Available at: <https://doi.org/10.1081/CSS-200058493>.
- Wang X., Liu W., Li Z., Teng Y., Christie P., dan Luo Y., 2020, Effects of Long-term Fertilizer Applications on Peanut Yield and Quality and Plant and Soil Heavy Metal Accumulation, *Pedosphere*, 30(4), 555-562. Available at: [https://doi.org/10.1016/S1002-0160\(17\)60457-0](https://doi.org/10.1016/S1002-0160(17)60457-0).
- Xiao, R., Wang, S., Li, R., Wang, J.J., Zhang, Z., 2017, Soil Heavy Metal Contamination and Health Risks Associated with Artisanal Gold Mining in Tongguan, Shaanxi, China, *Ecotoxicol. Environ. Saf.*, 2017, 141, 17-24. Available at: <https://doi.org/10.1016/j.ecoenv.2017.03.002>.
- Xu, J., Yin, H., Li, Y., dan Liu, X., 2010, Nitric Oxide is Associated With Long-term Zinc Tolerance in Solanum Nigrum, *Plant Physiol*, 154(3), 319-1334. Available at: <https://doi.org/10.1104/pp.110.162982>.
- Yang, B., Tong, X., Deng, Z., Lv, X., 2016, The Adsorption of Cu Species onto Pyrite Surface and Its Effect on Pyrite Flotation, *J. Chem.*, 2016, pp. 2-8. Available at: <https://doi.org/10.1155/2016/4627929>.
- Yruela, I., Alfonso, M., Baron, M., Picorel, R., 2000, Copper Effect On The Protein Composition of Photosystem II, *Physiologia Plantarum*, 110(4),

- 551–557. Available at: <https://doi.org/10.1111/j.1399-3054.2000.1100419.x>.
- Yuan, G., 2009, Copper, Zinc, and Nickel in Soil Solution Affected by Biosolids Amendment and Soil Management, *Australian Journal of Soil Research*, 47(3), 305–310. Available at: <https://doi.org/10.1071/SR08171>.
- Z Zeng, F., Ali, S., Zhang, H., Ouyang, Y., Qiu, B., Wu, F., dan Zhang, G., 2011, The Influence of pH and Organic Matter Content in Paddy Soil on Heavy Metal Availability and Their Uptake by Rice Plants, *Environmental Pollution*, 159(1), 84–91. Available at: <https://doi.org/10.1016/j.envpol.2010.09.019>.
- Zhang, F., Li, Y., Yang, M., Li, W., 2012, Content of Heavy Metals in Animal Feeds and Manures From Farms of Different Scales in Northeast China. *Int. J. Environ. Res. Public Health*, 9(8), 2658 - 2668. Available at: <https://doi.org/10.3390/ijerph9082658>.
- Zhou, T. *et al.* (2016) ‘Changes in organic carbon and nitrogen in soil with metal pollution by Cd, Cu, Pb and Zn: A meta-analysis’, *European Journal of Soil Science*, 67(2), pp. 237–246. Available at: <https://doi.org/10.1111/ejss.12327>.