

## DAFTAR PUSTAKA

- Adli, D. N., Sjoifan, O., Jayanegara, A., & Mahardika, B. P. (2021). Introduction to a systematic review and meta-analyses in Indonesia nutrition poultry: case study in probiotic. *IOP Conference Series: Earth and Environmental Science*, 883(1), 012017.
- Afridi JoharAU - Chang, J. H. T.-O. K. A. U.-A. (2020). Next Generation Sequencing Based Gut Resistome Profiling of Broiler Chickens Infected with Multidrug Resistant *Escherichia coli*. *Animals*, 10(12). <https://doi.org/10.3390/ani10122350>
- Ahmed, M. O., & Baptiste, K. E. (2017). Vancomycin-Resistant Enterococci: A Review of Antimicrobial Resistance Mechanisms and Perspectives of Human and Animal Health. *Microbial Drug Resistance*, 24(5), 590–606. <https://doi.org/10.1089/mdr.2017.0147>
- Ahn, Y., Jung, J. Y., Veach, B. T., Khare, S., Gokulan, K., Piñeiro, S. A., & Cerniglia, C. E. (2018). In vitro test systems to determine tetracycline residue binding to human feces. *Regulatory Toxicology and Pharmacology*, 99, 105–115. <https://doi.org/https://doi.org/10.1016/j.yrtph.2018.09.013>
- Aldred, K. J., Kerns, R. J., & Osherooff, N. (2014). Mechanism of Quinolone Action and Resistance. *Biochemistry*, 53(10), 1565–1574.
- Alengebawy, A., Abdelkhalek, S. T., Qureshi, S. R., & Wang, M.-Q. (2021). Heavy metals and pesticides toxicity in agricultural soil and plants: Ecological risks and human health implications. *Toxics*, 9(3), 42.
- Alloway, B. J. (2008). *Micronutrient deficiencies in global crop production*. Springer Science & Business Media.
- Amador, P., Fernandes, R., Prudêncio, C., & Duarte, I. (2019). Prevalence of Antibiotic Resistance Genes in Multidrug-Resistant Enterobacteriaceae on Portuguese Livestock Manure. *Antibiotics*, 8(1), 23.
- Amlinger, F. (2004). *Heavy Metals And Organic Compounds From Wastes Used As Organic Fertilisers* [Final Report].
- Andrade, F. F., Silva, D., Rodrigues, A., & Pina-Vaz, C. (2020). Colistin update on its mechanism of action and resistance, present and future challenges. *Microorganisms*, 8(11), 1716.
- Aoshima, K. (2016). Itai-itai disease: Renal tubular osteomalacia induced by environmental exposure to cadmium—historical review and perspectives. *Soil Science and Plant Nutrition*, 62(4), 319–326. <https://doi.org/10.1080/00380768.2016.1159116>

- Ayele, A., & Godeto, Y. G. (2021). Bioremediation of Chromium by Microorganisms and Its Mechanisms Related to Functional Groups. *Journal of Chemistry*, 2021, 7694157. <https://doi.org/10.1155/2021/7694157>
- Babakhani, S., & Oloomi, M. (2018). Transposons: The Agents of Antibiotic Resistance in Bacteria. *Journal of Basic Microbiology*, 58(11), 905–917. <https://doi.org/https://doi.org/10.1002/jobm.201800204>
- Badan Pusat Statistik. (2022). *Populasi Ternak (Sapi) 2016-2018*. <https://lampung.bps.go.id/indicator/24/275/1/populasi-ternak-sapi-.html>
- Badan Pusat Statistik. (2023). *Produksi Buah-buahan Menurut Kabupaten/Kota dan Jenis Tanaman (Kuintal), 2021*. <https://lampung.bps.go.id/indicator/55/614/1/produksi-buah-buahan-menurut-kabupaten-kota-dan-jenis-tanaman.html>
- Barak, J. D., Kramer, L. C., & Hao, L. (2011). Colonization of Tomato Plants by *Salmonella enterica* is Cultivar Dependent, and Type 1 trichomes are Preferred Colonization Sites. *Applied and Environmental Microbiology*, 77(2), 498–504.
- Beukers, A. G., Zaheer, R., Goji, N., Amoako, K. K., Chaves, A. V, Ward, M. P., & McAllister, T. A. (2017). Comparative genomics of *Enterococcus* spp. isolated from bovine feces. *BMC Microbiology*, 17(1), 52. <https://doi.org/10.1186/s12866-017-0962-1>
- Casacuberta, E., & González, J. (2013). The Impact of Transposable Elements in Environmental Adaptation. *Molecular Ecology*, 22(6), 1503–1517. <https://doi.org/https://doi.org/10.1111/mec.12170>
- Chapartegui-González, I., Fernández-Martínez, M., Rodríguez-Fernández, A., Rocha, D. J. P., Aguiar, E. R. G. R., Pacheco, L. G. C., Ramos-Vivas, J., Calvo, J., Martínez-Martínez, L., & Navas, J. (2020). Antimicrobial Susceptibility and Characterization of Resistance Mechanisms of *Corynebacterium urealyticum* Clinical Isolates. *Antibiotics*, 9(7). <https://doi.org/10.3390/antibiotics9070404>
- Charpentier, X., Polard, P., & Claverys, J.-P. (2012). Induction of Competence for Genetic Transformation by Antibiotics: Convergent Evolution of Stress Responses in Distant Bacterial Species Lacking SOS? *Current Opinion in Microbiology*, 15(5), 570–576.
- Chen, M., Ding, S., Li, C., Tang, Y., Fan, X., Xu, H., Tsang, D. C. W., & Zhang, C. (2021). High cadmium pollution from sediments in a eutrophic lake caused by dissolved organic matter complexation and reduction of manganese oxide. *Water Research*, 190, 116711. <https://doi.org/https://doi.org/10.1016/j.watres.2020.116711>

- Chen, S., Li, X., Sun, G., Zhang, Y., Su, J., & Ye, J. (2015). Heavy Metal Induced Antibiotic Resistance in Bacterium LSJC7. *International Journal of Molecular Sciences*, 16(10), 23390–23404.
- Cheng, W., Chen, H., Su, C., & Yan, S. (2013). Abundance and persistence of antibiotic resistance genes in livestock farms: A comprehensive investigation in eastern China. *Environment International*, 61, 1–7. <https://doi.org/https://doi.org/10.1016/j.envint.2013.08.023>
- Cheng, X., Danek, T., Drozdova, J., Huang, Q., Qi, W., Zou, L., Yang, S., Zhao, X., & Xiang, Y. (2018). Soil heavy metal pollution and risk assessment associated with the Zn-Pb mining region in Yunnan, Southwest China. *Environmental Monitoring and Assessment*, 190, 1–16.
- Christian, M., Andrea, L. G., Sabrina, D., Francesca, T., Francesca, B., Marta, M., Borja, S., Alice, V., Leonardo, M., Bernard, T., Véronique, D., Rodolphe, B., Abelardo, M., Douwe, van S., & Marco, V. (2014). Genomic Encyclopedia of Type Strains of the Genus Bifidobacterium. *Applied and Environmental Microbiology*, 80(20), 6290–6302. <https://doi.org/10.1128/AEM.02308-14>
- Commission, J. F. C. A. (1992). *Codex alimentarius*. Food & Agriculture Org.
- Connell, S. R., Tracz, D. M., Nierhaus, K. H., & Taylor, D. E. (2003). Ribosomal protection proteins and their mechanism of tetracycline resistance. *Antimicrobial Agents and Chemotherapy*, 47(12), 3675–3681.
- Cox, G., & Wright, G. D. (2013). Intrinsic antibiotic resistance: mechanisms, origins, challenges and solutions. *International Journal of Medical Microbiology*, 303(6–7), 287–292.
- da Silva, Y., Ferrari, R., Marin, V. A., & Junior, C. A. C. (2019). A Global Overview of  $\beta$ -lactam Resistance Genes in. *The Open Infectious Diseases Journal*, 11(1).
- Darwis, I., Hidayat, H., Wisnu, G. N. P. P., & Mentari, S. (2021). Bacteriological Profile and Antibiotic Susceptibility Pattern of Diabetic Foot Infection in a Tertiary Care Hospital in Lampung, Indonesia. *The Malaysian Journal of Medical Sciences: MJMS*, 28(5), 42.
- de Melo, B. A. G., Motta, F. L., & Santana, M. H. A. (2016). Humic acids: Structural properties and multiple functionalities for novel technological developments. *Materials Science and Engineering: C*, 62, 967–974. <https://doi.org/https://doi.org/10.1016/j.msec.2015.12.001>
- Debnath, B., Singh, W., & Manna, K. (2019). Sources and toxicological effects of lead on human health. *Indian Journal of Medical Specialities*, 10, 66. [https://doi.org/10.4103/INJMS.INJMS\\_30\\_18](https://doi.org/10.4103/INJMS.INJMS_30_18)

- Defarge, N., De Vendômois, J. S., & Séralini, G. E. (2018). Toxicity of formulants and heavy metals in glyphosate-based herbicides and other pesticides. *Toxicology Reports*, 5, 156–163.
- Dinos, G. P. (2017). The Macrolide Antibiotic Renaissance. *British Journal of Pharmacology*, 174(18), 2967–2983.
- Duan, M., Gu, J., Wang, X., Li, Y., Zhang, R., Hu, T., & Zhou, B. (2019). Factors that affect the occurrence and distribution of antibiotic resistance genes in soils from livestock and poultry farms. *Ecotoxicology and Environmental Safety*, 180, 114–122. <https://doi.org/https://doi.org/10.1016/j.ecoenv.2019.05.005>
- E, K. B., Lasse, B., Patrick, M., Oksana, L., Anders, P., M, A. F., & J, P. S. (2016). Impact of Sample Type and DNA Isolation Procedure on Genomic Inference of Microbiome Composition. *MSystems*, 1(5), 10.1128/msystems.00095-16. <https://doi.org/10.1128/msystems.00095-16>
- (EMA), E. M. A. (2017). *Reflection Paper on Use of Aminoglycosides in Animals in the European Union: Development of Resistance and Impact on Human and Animal Health*. European Medicines Agency London, UK.
- Emilia, I., Suheryanto, S., & Hanafiah, Z. (2013). Distribusi logam kadmium dalam air dan sedimen di Sungai Musi Kota Palembang. *Jurnal Penelitian Sains*, 16(2).
- Engin, A. B., Engin, E. D., & Engin, A. (2023). Effects of co-selection of antibiotic-resistance and metal-resistance genes on antibiotic-resistance potency of environmental bacteria and related ecological risk factors. *Environmental Toxicology and Pharmacology*, 98, 104081. <https://doi.org/https://doi.org/10.1016/j.etap.2023.104081>
- Erez, Z., Steinberger-Levy, I., Shamir, M., Doron, S., Stokar-Avihail, A., Peleg, Y., Melamed, S., Leavitt, A., Savidor, A., & Albeck, S. (2017). Communication between Viruses Guides Lysis–Lysogeny Decisions. *Nature*, 541(7638), 488–493.
- Ertani, A., Mietto, A., Borin, M., & Nardi, S. (2017). Chromium in agricultural soils and crops: a review. *Water, Air, & Soil Pollution*, 228, 1–12.
- Etebu, E., & Arikekpar, I. (2016). Antibiotics: Classification and Mechanisms of Action with Emphasis on Molecular Perspectives. *Int J Appl Microbiol Biotechnol Res*, 4(2016), 90–101.
- Fatoba, D. O., Amoako, D. G., Akebe, A. L. K., Ismail, A., & Essack, S. Y. (2022). Genomic analysis of antibiotic-resistant *Enterococcus* spp. reveals novel enterococci strains and the spread of plasmid-borne Tet(M), Tet(L) and Erm(B) genes from chicken litter to agricultural soil in South Africa. *Journal*

*of Environmental Management*, 302, 114101.  
<https://doi.org/https://doi.org/10.1016/j.jenvman.2021.114101>

Fazekašová, D., & Fazekaš, J. (2020). Soil Quality and Heavy Metal Pollution Assessment of Iron Ore Mines in Nizna Slana (Slovakia). *Sustainability*, 12(6).  
<https://doi.org/10.3390/su12062549>

Fernández, P. M., Viñarta, S. C., Bernal, A. R., Cruz, E. L., & Figueroa, L. I. C. (2018). Bioremediation strategies for chromium removal: Current research, scale-up approach and future perspectives. *Chemosphere*, 208, 139–148.  
<https://doi.org/https://doi.org/10.1016/j.chemosphere.2018.05.166>

Flach, C.-F., Pal, C., Svensson, C. J., Kristiansson, E., Östman, M., Bengtsson-Palme, J., Tysklind, M., & Larsson, D. G. J. (2017). Does Antifouling Paint Select for Antibiotic Resistance? *Science of The Total Environment*, 590–591, 461–468. <https://doi.org/https://doi.org/10.1016/j.scitotenv.2017.01.213>

Food and Agricultural Organization of the United Nations. (2023). *Pesticides Use*. Food and Agriculture Organization Corporate Statistical Database.  
<https://www.fao.org/faostat/en/#data/RP/visualize>

Frost, L. S., Leplae, R., Summers, A. O., & Toussaint, A. (2005). Mobile Genetic Elements: The Agents of Open Source Evolution. *Nature Reviews Microbiology*, 3(9), 722–732. <https://doi.org/10.1038/nrmicro1235>

Fu, Z., & Xi, S. (2020). The effects of heavy metals on human metabolism. *Toxicology Mechanisms and Methods*, 30(3), 167–176.

Gamerding, M., & Deuerling, E. (2012). Macrolides: The Plug is Out. *Cell*, 151(3), 469–471.

Garneau-Tsodikova, S., & Labby, K. J. (2016). Mechanisms of resistance to aminoglycoside antibiotics: overview and perspectives. *Medchemcomm*, 7(1), 11–27.

Gupta, U. C., Kening, W. U., & Liang, S. (2008). Micronutrients in soils, crops, and livestock. *Earth Science Frontiers*, 15(5), 110–125.

Hajrulai-Musliu, Z., Uzunov, R., Krluku, M., Jovanov, S., Stojkovski, V., Arapcheska, M., Musliu, D., & Sasanya, J. J. (2023). Determination of Multi-Class Antimicrobial Residues and Antimicrobial Resistance in Cow Milk and Feces Samples during Withdrawal Period. *Animals*, 13(23), 3603.

Hegazy, A. A., Zaher, M. M., Abd el-hafez, M. A., Morsy, A. A., & Saleh, R. A. (2010). Relation between anemia and blood levels of lead, copper, zinc and iron among children. *BMC Research Notes*, 3(1), 133.

- Homa, D., Haile, E., & Washe, A. P. (2016). Determination of spatial chromium contamination of the environment around industrial zones. *International Journal of Analytical Chemistry*, 2016.
- ina, S., & Taw. (2013). Chromium, an essential nutrient and pollutant: A review. *African Journal of Pure and Applied Chemistry*, 7(9), 310–317.
- Indrawati, A., Khoirani, K., Setiyaningsih, S., Affif, U., & Ningrum, S. G. (2021). Detection of Tetracycline Resistance Genes among *Escherichia coli* Isolated from Layer and Broiler Breeders in West Java, Indonesia. *Tropical Animal Science Journal*, 44(3), 267–272.
- Jian, Z., Zeng, L., Xu, T., Sun, S., Yan, S., Yang, L., Huang, Y., Jia, J., & Dou, T. (2021). Antibiotic resistance genes in bacteria: Occurrence, spread, and control. *Journal of Basic Microbiology*, 61(12), 1049–1070. <https://doi.org/https://doi.org/10.1002/jobm.202100201>
- Joaquim, R. (2019). Transferable Mechanisms of Quinolone Resistance from 1998 Onward. *Clinical Microbiology Reviews*, 32(4), 10.1128/cmr.00007-19. <https://doi.org/10.1128/cmr.00007-19>
- Juhas, M. (2015). Horizontal gene transfer in human pathogens. *Critical Reviews in Microbiology*, 41(1), 101–108.
- Junio, G. R. Z., Sampaio, R. A., Fernandes, L. A., Pegoraro, R. F., Maia, V. M., Cardoso, P. H. S., de Paula Sousa, I., & do Rosário Vieira, I. T. (2019). Content of heavy metals in soil and in pineapple fertilized with sewage sludge. *Journal of Agricultural Science*.
- Kaji, M. (2012). Role of experts and public participation in pollution control: the case of Itai-itai disease in Japan<sup>1</sup>. *Ethics in Science and Environmental Politics*, 12(2), 99–111. <https://www.int-res.com/abstracts/ese/v12/n2/p99-111/>
- Kang, J., Liu, Y., Chen, X., Xu, F., Wang, H., Xiong, W., & Li, X. (2022). Metagenomic insights into the antibiotic resistomes of typical Chinese dairy farm environments. *Frontiers in Microbiology*, 13. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.990272>
- Kesehatan, J. A., & Tuntun, M. (2022). Pola Bakteri Kontaminan Serta Resistensinya di ICU dan Ruang Operasi Pada Rumah Sakit di Bandar Lampung. *Jurnal Analis Kesehatan*, 11(1), 1–10. <https://ejurnal.poltekkes-tjk.ac.id/index.php/JANALISKES/article/view/3201>
- Kobayashi, E., Suwazono, Y., Dochi, M., Honda, R., & Kido, T. (2009). Influence of Consumption of Cadmium-Polluted Rice or Jinzu River Water on Occurrence of Renal Tubular Dysfunction and/or Itai-itai Disease. *Biological*



*Trace Element Research*, 127(3), 257–268. <https://doi.org/10.1007/s12011-008-8239-z>

- Kreamer, N. N. K., Chopra, R., Caughlan, R. E., Fabbro, D., Fang, E., Gee, P., Hunt, I., Li, M., Leon, B. C., Muller, L., Vash, B., Woods, A. L., Stams, T., Dean, C. R., & Uehara, T. (2018). Acylated-acyl carrier protein stabilizes the *Pseudomonas aeruginosa* WaaP lipopolysaccharide heptose kinase. *Scientific Reports*, 8(1), 14124. <https://doi.org/10.1038/s41598-018-32379-1>
- Kubier, A., Wilkin, R. T., & Pichler, T. (2019). Cadmium in soils and groundwater: a review. *Applied Geochemistry*, 108, 104388.
- Kumar, N., Kulsoom, M., Shukla, V., Kumar, D., Priyanka, Kumar, S., Tiwari, J., & Dwivedi, N. (2018). Profiling of heavy metal and pesticide residues in medicinal plants. *Environmental Science and Pollution Research*, 25, 29505–29510.
- Kurenbach, B., Hill, A. M., Godsoe, W., van Hamelsveld, S., & Heinemann, J. A. (2018). Agrichemicals and Antibiotics in Combination Increase Antibiotic Resistance Evolution. *PeerJ*, 6, e5801.
- Larson, A., Hartinger, S. M., Riveros, M., Salmon-Mulanovich, G., Hattendorf, J., Verastegui, H., Huaylinos, M. L., & Mäusezahl, D. (2019). Antibiotic-resistant *Escherichia coli* in drinking water samples from rural Andean households in Cajamarca, Peru. *The American Journal of Tropical Medicine and Hygiene*, 100(6), 1363.
- Levine, D. P. (2006). Vancomycin: A History. *Clinical Infectious Diseases*, 42(Supplement\_1), S5–S12. <https://doi.org/10.1086/491709>
- Li, G., Walker, M. J., & De Oliveira, D. M. P. (2023). Vancomycin Resistance in *Enterococcus* and *Staphylococcus aureus*. *Microorganisms*, 11(1). <https://doi.org/10.3390/microorganisms11010024>
- Li, H., Yang, Z., Dai, M., Diao, X., Dai, S., Fang, T., & Dong, X. (2020). Input of Cd from agriculture phosphate fertilizer application in China during 2006–2016. *Science of The Total Environment*, 698, 134149. <https://doi.org/https://doi.org/10.1016/j.scitotenv.2019.134149>
- Li, X., Ruan, H., Zhou, C., Meng, X., & Chen, W. (2021). Controlling Citrus Huanglongbing: Green Sustainable Development Route Is the Future. *Frontiers in Plant Science*, 12.
- Li, X., Zhang, J., Ma, J., Liu, Q., Shi, T., Gong, Y., Yang, S., & Wu, Y. (2020). Status of chromium accumulation in agricultural soils across China (1989–2016). *Chemosphere*, 256, 127036. <https://doi.org/https://doi.org/10.1016/j.chemosphere.2020.127036>

- Li, Y., Xiong, X., Chun-ye, L., Feng-song, Z., Wei, L., & Wei, H. (2010). Cadmium in animal production and its potential hazard on Beijing and Fuxin farmlands. *Journal of Hazardous Materials*, 177(1), 475–480. <https://doi.org/https://doi.org/10.1016/j.jhazmat.2009.12.057>
- Lim, N. Y. N., Roco, C. A., & Frostegård, Å. (2016). Transparent DNA/RNA Co-extraction Workflow Protocol Suitable for Inhibitor-Rich Environmental Samples That Focuses on Complete DNA Removal for Transcriptomic Analyses. *Frontiers in Microbiology*, 7. <https://www.frontiersin.org/articles/10.3389/fmicb.2016.01588>
- Lin, H., Chapman, S. J., Freitag, T. E., Kyle, C., Ma, J., Yang, Y., & Zhang, Z. (2019). Fate of tetracycline and sulfonamide resistance genes in a grassland soil amended with different organic fertilizers. *Ecotoxicology and Environmental Safety*, 170, 39–46. <https://doi.org/https://doi.org/10.1016/j.ecoenv.2018.11.059>
- Liu, Y., Xiao, T., Ning, Z., Li, H., Tang, J., & Zhou, G. (2013). High cadmium concentration in soil in the Three Gorges region: Geogenic source and potential bioavailability. *Applied Geochemistry*, 37, 149–156. <https://doi.org/https://doi.org/10.1016/j.apgeochem.2013.07.022>
- Liu, Y., Xiao, T., Perkins, R. B., Zhu, J., Zhu, Z., Xiong, Y., & Ning, Z. (2017). Geogenic cadmium pollution and potential health risks, with emphasis on black shale. *Journal of Geochemical Exploration*, 176, 42–49. <https://doi.org/https://doi.org/10.1016/j.gexplo.2016.04.004>
- Ma, L., Li, A.-D., Yin, X.-L., & Zhang, T. (2017). The Prevalence of Integrons as the Carrier of Antibiotic Resistance Genes in Natural and Man-Made Environments. *Environmental Science & Technology*, 51(10), 5721–5728. <https://doi.org/10.1021/acs.est.6b05887>
- Maulana, K. Y., Pichpol, D., Farhani, N. R., Widiastih, D. A., Unger, F., Punyapornwithaya, V., & Meeyam, T. (2021). Antimicrobial Resistance Characteristics of Extended Spectrum Beta Lactamase (ESBL)-Producing *Escherichia coli* from Dairy Farms in the Sleman District of Yogyakarta Province, Indonesia. *Veterinary Integrative Sciences*, 19(3), 525–535.
- Mazel, D. (2006). Integrons: Agents of Bacterial Evolution. *Nature Reviews Microbiology*, 4(8), 608–620. <https://doi.org/10.1038/nrmicro1462>
- McIntosh, D., Cunningham, M., Ji, B., Fekete, F. A., Parry, E. M., Clark, S. E., Zalinger, Z. B., Gilg, I. C., Danner, G. R., & Johnson, K. A. (2008). Transferable, multiple antibiotic and mercury resistance in Atlantic Canadian isolates of *Aeromonas salmonicida* subsp. *salmonicida* is associated with



- carriage of an IncA/C plasmid similar to the *Salmonella enterica* plasmid pSN254. *Journal of Antimicrobial Chemotherapy*, 61(6), 1221–1228.
- Miklasińska-Majdanik, M. (2021). Mechanisms of Resistance to Macrolide Antibiotics among *Staphylococcus aureus*. *Antibiotics*, 10(11). <https://doi.org/10.3390/antibiotics10111406>
- Minerdi, D., Loqui, D., & Sabbatini, P. (2023). Monooxygenases and Antibiotic Resistance: A Focus on Carbapenems. *Biology*, 12(10). <https://doi.org/10.3390/biology12101316>
- Minimum technical requirements for organic fertilizer, biological fertilizer and soil conditioner, Pub. L. No. 261/KPTS/SR.310/M/4/2019, Decree of Minister of Agriculture of the Republic Indonesia (2019).
- Mofor, N. A., Tamungang, E. B. N., Mvondo-zé, A. D., Kome, G. K., & Mbene, K. (2017). Assessment of physico-chemical and heavy metals properties of some agricultural soils of Awing-North West Cameroon. *Archives of Agriculture and Environmental Science*, 2(4), 277–286.
- Mohamed, I., Ahamadou, B., Li, M., Gong, C., Cai, P., Liang, W., & Huang, Q. (2010). Fractionation of copper and cadmium and their binding with soil organic matter in a contaminated soil amended with organic materials. *Journal of Soils and Sediments*, 10(6), 973–982. <https://doi.org/10.1007/s11368-010-0199-1>
- Mohanraj, R. S., & Mandal, J. (2022). Azithromycin can Induce SOS Response and Horizontal Gene Transfer of SXT Element in *Vibrio cholerae*. *Molecular Biology Reports*, 1–12.
- Morillo, E., Undabeytia, T., Maqueda, C., & Ramos, A. (2000). Glyphosate adsorption on soils of different characteristics.: Influence of copper addition. *Chemosphere*, 40(1), 103–107. [https://doi.org/https://doi.org/10.1016/S0045-6535\(99\)00255-6](https://doi.org/10.1016/S0045-6535(99)00255-6)
- Mulyani, O., & Machfud, Y. (2023). Fungsi Hubungan Sifat Kimia Tanah dan Penggunaan Pestisida dengan Kandungan Kadmium Pada Lahan Sawah. *Agrikultura*, 34(2), 315–324.
- Muñoz-López, M., & García-Pérez, J. L. (2010). DNA Transposons: Nature and Applications in Genomics. *Current Genomics*, 11(2), 115–128.
- Muurinen, J., Stedtfeld, R., Karkman, A., Pärnänen, K., Tiedje, J., & Virta, M. (2017). Influence of Manure Application on the Environmental Resistome under Finnish Agricultural Practice with Restricted Antibiotic Use. *Environmental Science & Technology*, 51(11), 5989–5999. <https://doi.org/10.1021/acs.est.7b00551>

- Nacke, H., Gonçalves, A. C., Schwantes, D., Nava, I. A., Strey, L., & Coelho, G. F. (2013). Availability of Heavy Metals (Cd, Pb, and Cr) in Agriculture from Commercial Fertilizers. *Archives of Environmental Contamination and Toxicology*, 64(4), 537–544. <https://doi.org/10.1007/s00244-012-9867-z>
- Nadeem, S. F., Gohar, U. F., Tahir, S. F., Mukhtar, H., Pornpukdeewattana, S., Nukthamna, P., Moula Ali, A. M., Bavisetty, S. C. B., & Massa, S. (2020). Antimicrobial resistance: more than 70 years of war between humans and bacteria. *Critical Reviews in Microbiology*, 46(5), 578–599. <https://doi.org/10.1080/1040841X.2020.1813687>
- Nasirzadeh, N., Mohammadian, Y., & Dehgan, G. (2022). Health Risk Assessment of Occupational Exposure to Hexavalent Chromium in Iranian Workplaces: a Meta-analysis Study. *Biological Trace Element Research*, 200(4), 1551–1560. <https://doi.org/10.1007/s12011-021-02789-w>
- Nguyen, F., Starosta, A. L., Arenz, S., Sohmen, D., Dönhöfer, A., & Wilson, D. N. (2014a). Tetracycline Antibiotics and Resistance Mechanisms. *Biological Chemistry*, 395(5), 559–575.
- Nguyen, F., Starosta, A. L., Arenz, S., Sohmen, D., Dönhöfer, A., & Wilson, D. N. (2014b). Tetracycline Antibiotics and Resistance Mechanisms. *Biological Chemistry*, 395(5), 559–575.
- Nimonkar, Y. S., Yadav, B., Talreja, P., Sharma, A., Patil, S., Saware, S. S., Ranade, D. R., & Prakash, O. (2019). Assessment of the Role of Wastewater Treatment Plant in Spread of Antibiotic Resistance and Bacterial Pathogens. *Indian Journal of Microbiology*, 59(3), 261–265. <https://doi.org/10.1007/s12088-019-00793-2>
- Niño-Savala, A. G., Zhuang, Z., Ma, X., Fangmeier, A., Li, H., Tang, A., & Liu, X. (2019). Cadmium pollution from phosphate fertilizers in arable soils and crops: An overview. *Front. Agric. Sci. Eng*, 6, 419–430.
- Nøhr-Meldgaard, K., Struve, C., Ingmer, H., & Agersø, Y. (2021). The Tetracycline Resistance Gene, tet(W) in *Bifidobacterium animalis* subsp. *lactis* Follows Phylogeny and Differs From tet(W) in Other Species. *Frontiers in Microbiology*, 12. <https://www.frontiersin.org/articles/10.3389/fmicb.2021.658943>
- Novović, K., & Jovčić, B. (2023). Colistin resistance in *Acinetobacter baumannii*: molecular mechanisms and epidemiology. *Antibiotics*, 12(3), 516.
- Ogundele, D. T., Adio, A. A., & Oludele, O. E. (2015). Heavy metal concentrations in plants and soil along heavy traffic roads in North Central Nigeria. *Journal of Environmental & Analytical Toxicology*, 5(6), 1.

- Pang, Z., Raudonis, R., Glick, B. R., Lin, T.-J., & Cheng, Z. (2019). Antibiotic resistance in *Pseudomonas aeruginosa*: mechanisms and alternative therapeutic strategies. *Biotechnology Advances*, 37(1), 177–192. <https://doi.org/https://doi.org/10.1016/j.biotechadv.2018.11.013>
- Peng, S., Wang, Y., Zhou, B., & Lin, X. (2015). Long-term application of fresh and composted manure increase tetracycline resistance in the arable soil of eastern China. *Science of the Total Environment*, 506, 279–286.
- Permatasari, D. A., Witaningrum, A. M., Wibisono, F. J., & Effendi, M. H. (2020). Detection and Prevalence of Multidrug-Resistant *Klebsiella pneumoniae* Strains isolated from Poultry Farms in Blitar, Indonesia. *Biodiversitas Journal of Biological Diversity*, 21(10).
- Pham, T. D. M., Ziora, Z. M., & Blaskovich, M. A. T. (2019a). Quinolone Antibiotics. *Medchemcomm*, 10(10), 1719–1739.
- Pham, T. D. M., Ziora, Z. M., & Blaskovich, M. A. T. (2019b). Quinolone antibiotics. *Medchemcomm*, 10(10), 1719–1739.
- Poniman, P., Hidayah, A., & Sukarjo, S. (2021). Information on the Distribution of Cadmium in Agricultural Land in the Middle of the Serayu Watershed. *KnE Social Sciences*, 5(7 SE-Articles). <https://doi.org/10.18502/kss.v5i7.9326>
- Prasad, S., Yadav, K. K., Kumar, S., Gupta, N., Cabral-Pinto, M. M. S., Rezanian, S., Radwan, N., & Alam, J. (2021). Chromium contamination and effect on environmental health and its remediation: A sustainable approaches. *Journal of Environmental Management*, 285, 112174. <https://doi.org/https://doi.org/10.1016/j.jenvman.2021.112174>
- GOVERNMENT REGULATIONS OF THE REPUBLIC OF INDONESIA NUMBER 22 OF 2021 ABOUT IMPLEMENTATION OF PROTECTION AND MANAGEMENT ENVIRONMENT, Pub. L. No. SK No 085459 A (2021). [https://jdih.setkab.go.id/PUUdoc/176367/Lampiran\\_VI\\_Salinan\\_PP\\_Nomor\\_22\\_Tahun\\_2021.pdf](https://jdih.setkab.go.id/PUUdoc/176367/Lampiran_VI_Salinan_PP_Nomor_22_Tahun_2021.pdf)
- Promnim, P. (2012). *Potential use of pineapple (ananas comosus L.) and cadmium tolerant bacteria to reduce cadmium toxicity in soil* [Dissertation]. Newcastle University.
- Putri, R. E., Kim, L. H., Farhat, N., Felemban, M., Saikaly, P. E., & Vrouwenvelder, J. S. (2021). Evaluation of DNA extraction yield from a chlorinated drinking water distribution system. *PLOS ONE*, 16(6), e0253799. <https://doi.org/10.1371/journal.pone.0253799>

- Qian, X., Sun, W., Gu, J., Wang, X.-J., Sun, J.-J., Yin, Y.-N., & Duan, M.-L. (2016). Variable effects of oxytetracycline on antibiotic resistance gene abundance and the bacterial community during aerobic composting of cow manure. *Journal of Hazardous Materials*, 315, 61–69. <https://doi.org/https://doi.org/10.1016/j.jhazmat.2016.05.002>
- Ramandinianto, S. C., Khairullah, A. R., & Effendi, M. H. (2020). MecA Gene and Methicillin-resistant *Staphylococcus aureus* (MRSA) Isolated from Dairy Farms in East Java, Indonesia. *Biodiversitas*, 21(8), 3562–3568.
- Ramirez, M. S., & Tolmasky, M. E. (2010). Aminoglycoside modifying enzymes. *Drug Resistance Updates*, 13(6), 151–171.
- Rasschaert, G., Van Elst, D., Colson, L., Herman, L., de Carvalho Ferreira, H. C., Dewulf, J., Decrop, J., Meirlaen, J., Heyndrickx, M., & Daeseleire, E. (2020). Antibiotic residues and antibiotic-resistant bacteria in pig slurry used to fertilize agricultural fields. *Antibiotics*, 9(1), 34.
- Reis, R. A. G., Li, H., Johnson, M., & Sobrado, P. (2021). New frontiers in flavin-dependent monooxygenases. *Archives of Biochemistry and Biophysics*, 699, 108765. <https://doi.org/https://doi.org/10.1016/j.abb.2021.108765>
- Rosihan, A., & Husaini, H. (2017). *Logam Berat Sekitar Manusia*. Pustaka Buana.
- Rusmini, R., Sukarmin, S., & Muchlis, M. (2018). Bioremediation of cadmium and chromium metal polluted soil using compost. *International Conference on Science and Technology (ICST 2018)*, 775–778.
- Salazar, M. J., Rodriguez, J. H., Nieto, G. L., & Pignata, M. L. (2012). Effects of heavy metal concentrations (Cd, Zn and Pb) in agricultural soils near different emission sources on quality, accumulation and food safety in soybean [*Glycine max* (L.) Merrill]. *Journal of Hazardous Materials*, 233–234, 244–253. <https://doi.org/https://doi.org/10.1016/j.jhazmat.2012.07.026>
- Scherer, A., Vogt, H.-R., Vilei, E. M., Frey, J., & Perreten, V. (2013). Enhanced antibiotic multi-resistance in nasal and faecal bacteria after agricultural use of streptomycin. *Environmental Microbiology*, 15(1), 297–304. <https://doi.org/https://doi.org/10.1111/1462-2920.12028>
- Schwaiger, K., Bauer, J., Hörmansdorfer, S., Mölle, G., Preikschat, P., Kämpf, P., Bauer-Unkauf, I., Bischoff, M., & Hölzel, C. (2012). Presence of the resistance genes *vanC1* and *pbp5* in phenotypically vancomycin and ampicillin susceptible *Enterococcus faecalis*. *Microbial Drug Resistance*, 18(4), 434–439.
- Scientific, T. F. (2011). Assessment of Nucleic Acid Purity, T042-Technical Bulletin. *Thermo Fisher Scientific–NanoDrop Products*. Wilmington, DE.

- Serio, A. W., Magalhães, M. L., Blanchard, J. S., & Connolly, L. E. (2017). Aminoglycosides: Mechanisms of action and resistance. *Antimicrobial Drug Resistance: Mechanisms of Drug Resistance, Volume 1*, 213–229.
- Shaikh, S., Fatima, J., Shakil, S., Rizvi, S. M. D., & Kamal, M. A. (2015). Antibiotic resistance and extended spectrum beta-lactamases: Types, epidemiology and treatment. *Saudi Journal of Biological Sciences*, 22(1), 90–101.
- Shen, Q., Tang, J., Wang, X., Li, Y., Yao, X., Sun, H., & Wu, Y. (2021). Fate of antibiotic resistance genes and metal resistance genes during the thermophilic fermentation of solid and liquid swine manures in an ectopic fermentation system. *Ecotoxicology and Environmental Safety*, 213, 111981. <https://doi.org/https://doi.org/10.1016/j.ecoenv.2021.111981>
- Shi, T., Zhang, Y., Gong, Y., Ma, J., Wei, H., Wu, X., Zhao, L., & Hou, H. (2019). Status of cadmium accumulation in agricultural soils across China (1975–2016): From temporal and spatial variations to risk assessment. *Chemosphere*, 230, 136–143. <https://doi.org/https://doi.org/10.1016/j.chemosphere.2019.04.208>
- Siguié, P., Gourbeyre, E., Varani, A., Ton-Hoang, B., & Chandler, M. (2015). Everyman's Guide to Bacterial Insertion Sequences. *Mobile DNA* 15, 555–590.
- Somda, N. S., Bonkougou, I. J. O., Sambe-Ba, B., Drabo, M. S., Wane, A. A., Sawadogo-Lingani, H., & Savadogo, A. (2021). Diversity and antimicrobial drug resistance of non-typhoid *Salmonella* serotypes isolated in lettuce, irrigation water and clinical samples in Burkina Faso. *Journal of Agriculture and Food Research*, 5, 100167. <https://doi.org/https://doi.org/10.1016/j.jafr.2021.100167>
- SOMDA, N. S., Bonkougou, J. I. O., Traoré, O., Sambe-Ba, B., Wane, A. A., Traoré, Y., & Savadogo, A. (2019). First description of class 1 integron in typhoidal *Salmonella* isolated from clinical and lettuce samples in Burkina Faso.
- Soucy, S. M., Huang, J., & Gogarten, J. P. (2015). Horizontal Gene Transfer Buildings the Web of Life. *Nature Reviews Genetics*, 16(8), 472–482.
- Stalder, T., Barraud, O., Casellas, M., Dagot, C., & Ploy, M.-C. (2012). Integron Involvement in Environmental Spread of Antibiotic Resistance . In *Frontiers in Microbiology* (Vol. 3).
- Stogios, P. J., & Savchenko, A. (2020). Molecular mechanisms of vancomycin resistance. *Protein Science*, 29(3), 654–669. <https://doi.org/https://doi.org/10.1002/pro.3819>

- Suciu, N. A., De Vivo, R., Rizzati, N., & Capri, E. (2022). Cd content in phosphate fertilizer: Which potential risk for the environment and human health? *Current Opinion in Environmental Science & Health*, 30, 100392. <https://doi.org/https://doi.org/10.1016/j.coesh.2022.100392>
- Sugiri, Y. D., Goelz, G., Meeyam, T., Baumann, M. P. O., Kleer, J., Chaisowwong, W., & Alter, T. (2014). Prevalence and Antimicrobial Susceptibility of *Listeria monocytogenes* on Chicken Caracasses in Bandung, Indonesia. *Journal of Food Protection*, 77(8), 1407–1410.
- Sun, W., Gu, J., Wang, X., Qian, X., & Peng, H. (2019). Solid-state anaerobic digestion facilitates the removal of antibiotic resistance genes and mobile genetic elements from cattle manure. *Bioresource Technology*, 274, 287–295. <https://doi.org/https://doi.org/10.1016/j.biortech.2018.09.013>
- Tang, S. S., Apisarnthanarak, A., & Hsu, L. Y. (2014). Mechanisms of  $\beta$ -lactam antimicrobial resistance and epidemiology of major community- and healthcare-associated multidrug-resistant bacteria. *Advanced Drug Delivery Reviews*, 78, 3–13. <https://doi.org/https://doi.org/10.1016/j.addr.2014.08.003>
- Tariq, S., Rizvi, S. F. A., & Anwar, U. (2018). Tetracycline: Classification, Structure Activity Relationship and Mechanism of Action as a Theranostic Agent for Infectious Lesions-a Mini Review. *Biomed. J. Sci. Tech. Res*, 7, 5787–5796.
- Thomas, C., & Nielsen, K. (2005). Mechanisms of, and Barriers to, Horizontal Gene Transfer between Bacteria. *Nature Reviews. Microbiology*, 3, 711–721. <https://doi.org/10.1038/nrmicro1234>
- Tian, W., Zhang, Z., Liu, D., Zhou, T., Shen, Q., & Shen, B. (2013). An optimized DNA extraction and purification method from dairy manure compost for genetic diversity analysis. *World Journal of Microbiology and Biotechnology*, 29(5), 815–823. <https://doi.org/10.1007/s11274-012-1236-6>
- Tiseo, K., Huber, L., Gilbert, M., Robinson, T. P., & Van Boeckel, T. P. (2020). Global Trends in Antimicrobial Use in Food Animals from 2017 to 2030. *Antibiotics*, 9(12), 918.
- Tripathi, A., Kumar, D., Chavda, P., Rathore, D. S., Pandit, R., Blake, D., Tomley, F., Joshi, M., Joshi, C. G., & Dubey, S. K. (2023). Resistome profiling reveals transmission dynamics of antimicrobial resistance genes from poultry litter to soil and plant. *Environmental Pollution*, 327, 121517. <https://doi.org/https://doi.org/10.1016/j.envpol.2023.121517>
- Tumolo, M., Ancona, V., De Paola, D., Losacco, D., Campanale, C., Massarelli, C., & Uricchio, V. F. (2020). Chromium pollution in European water, sources,



health risk, and remediation strategies: An overview. *International Journal of Environmental Research and Public Health*, 17(15), 5438.

Turolla, A., Cattaneo, M., Marazzi, F., Mezzanotte, V., & Antonelli, M. (2018). Antibiotic resistant bacteria in urban sewage: Role of full-scale wastewater treatment plants on environmental spreading. *Chemosphere*, 191, 761–769. <https://doi.org/https://doi.org/10.1016/j.chemosphere.2017.10.099>

US Food and Drug Administration. (2021). *2020 Summary Report on Antimicrobials Sold or Distributed for Use in Food-producing Animals*.

Van Boeckel, T. P., Brower, C., Gilbert, M., Grenfell, B. T., Levin, S. A., Robinson, T. P., Teillant, A., & Laxminarayan, R. (2015). Global Trends in Antimicrobial Use in Food Animals. *Proceedings of the National Academy of Sciences*, 112(18), 5649–5654.

Van Hoek, A. H. A. M., Mevius, D., Guerra, B., Mullany, P., Roberts, A. P., & Aarts, H. J. M. (2011). Acquired Antibiotic Resistance Genes: An Overview. *Frontiers in Microbiology*, 2, 203.

Vats, P., Kaur, U. J., & Rishi, P. (2022). Heavy Metal-induced Selection and Proliferation of Antibiotic Resistance: A Review. *Journal of Applied Microbiology*, 132(6), 4058–4076.

Velasquez, C. G., Macklin, K. S., Kumar, S., Bailey, M., Ebner, P. E., Oliver, H. F., Martin-Gonzalez, F. S., & Singh, M. (2018). Prevalence and antimicrobial resistance patterns of Salmonella isolated from poultry farms in southeastern United States. *Poultry Science*, 97(6), 2144–2152. <https://doi.org/https://doi.org/10.3382/ps/pex449>

Velásquez-Mejía, E. P., de la Cuesta-Zuluaga, J., & Escobar, J. S. (2018). Impact of DNA extraction, sample dilution, and reagent contamination on 16S rRNA gene sequencing of human feces. *Applied Microbiology and Biotechnology*, 102(1), 403–411. <https://doi.org/10.1007/s00253-017-8583-z>

Vodyanitskii, Yu. N. (2016). Standards for the contents of heavy metals in soils of some states. *Annals of Agrarian Science*, 14(3), 257–263. <https://doi.org/https://doi.org/10.1016/j.aasci.2016.08.011>

Wang, L., Li, P., Duan, R., & He, X. (2022). Occurrence, Controlling Factors and Health Risks of Cr6+ in Groundwater in the Guanzhong Basin of China. *Exposure and Health*, 14(2), 239–251. <https://doi.org/10.1007/s12403-021-00410-y>

Wang, L., Liu, D., Lv, Y., Cui, L., Li, Y., Li, T., Song, H., Hao, Y., Shen, J., & Wang, Y. (2019). Novel Plasmid-mediated Tet (X5) Gene Conferring Resistance to Tigecycline, Eravacycline, and Omadacycline in a Clinical

*Acinetobacter baumannii* Isolate. *Antimicrobial Agents and Chemotherapy*, 64(1), e01326-19.

Wang, X., Wang, Y., Zhou, Y., Li, J., Yin, W., Wang, S., Zhang, S., Shen, J., Shen, Z., & Wang, Y. (2018). Emergence of a novel mobile colistin resistance gene, *mcr-8*, in NDM-producing *Klebsiella pneumoniae*. *Emerging Microbes & Infections*, 7(1), 1–9.

WHO. (2023). *Antimicrobial resistance*. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance#:~:text=Antimicrobials—including antibiotics%2C antivirals%2C,in humans%2C animals and plants.>

Wright, G. D. (2011). Molecular mechanisms of antibiotic resistance. *Chemical Communications*, 47(14), 4055–4061.

Xu, S., Xing, Y., Liu, S., Huang, Q., & Chen, W. (2019). Role of novel bacterial *Raoultella* sp. strain X13 in plant growth promotion and cadmium bioremediation in soil. *Applied Microbiology and Biotechnology*, 103(9), 3887–3897. <https://doi.org/10.1007/s00253-019-09700-7>

Xu, Y., Li, H., Shi, R., Lv, J., Li, B., Yang, F., Zheng, X., & Xu, J. (2020). Antibiotic resistance genes in different animal manures and their derived organic fertilizer. *Environmental Sciences Europe*, 32(1), 102. <https://doi.org/10.1186/s12302-020-00381-y>

Yang, H., Byelashov, O. A., Geornaras, I., Goodridge, L. D., Nightingale, K. K., Belk, K. E., Smith, G. C., & Sofos, J. N. (2010). Characterization and transferability of class 1 integrons in commensal bacteria isolated from farm and nonfarm environments. *Foodborne Pathogens and Disease*, 7(12), 1441–1451.

Yang, S., Deng, W., Liu, S., Yu, X., Mustafa, G. R., Chen, S., He, L., Ao, X., Yang, Y., & Zhou, K. (2020). Presence of Heavy Metal Resistance Genes in *Escherichia coli* and *Salmonella* Isolates and Analysis of Resistance Gene Structure in *E. coli* E308. *Journal of Global Antimicrobial Resistance*, 21, 420–426.

Yu, P., Dong, P., Zou, Y., & Wang, H. (2023). Effect of pH on the mitigation of extracellular/intracellular antibiotic resistance genes and antibiotic resistance pathogenic bacteria during anaerobic fermentation of swine manure. *Bioresource Technology*, 373, 128706. <https://doi.org/https://doi.org/10.1016/j.biortech.2023.128706>

Yue, Z., Zhang, J., Zhou, Z., Ding, C., Wan, L., Liu, J., Chen, L., & Wang, X. (2021). Pollution characteristics of livestock faeces and the key driver of the spread of antibiotic resistance genes. *Journal of Hazardous Materials*, 409, 124957. <https://doi.org/https://doi.org/10.1016/j.jhazmat.2020.124957>

- Yuris, A., & Siow, L.-F. (2014). A Comparative Study of the Antioxidant Properties of Three Pineapple (*Ananas comosus* L.) Varieties. *Journal of Food Studies*, 3, 40. <https://doi.org/10.5296/jfs.v3i1.4995>
- Yusuf, H., Idris, S., & Paul, M. (2017). Antimicrobial usage surveillance of cattle in Indonesia to address Antimicrobial resistance. *1st International Conference Postgraduate School Universitas Airlangga: "Implementation of Climate Change Agreement to Meet Sustainable Development Goals"(ICPSUAS 2017)*, 355–359.
- Yusuf, H., Idris, S., & Paul, M. (2018a). *Antimicrobial Usage Surveillance of Cattle in Indonesia to Address Antimicrobial Resistance*. <https://doi.org/10.2991/icpsuas-17.2018.77>
- Yusuf, H., Idris, S., & Paul, M. (2018b). *Antimicrobial Usage Surveillance of Cattle in Indonesia to Address Antimicrobial Resistance*. <https://doi.org/10.2991/icpsuas-17.2018.77>
- Zeng, X., & Lin, J. (2017). Factors Influencing Horizontal Gene Transfer in The Intestine. *Animal Health Research Reviews*, 18(2), 153–159.
- Zhai, W., Tian, Y., Shao, D., Zhang, M., Li, J., Song, H., Sun, C., Wang, Y., Liu, D., & Zhang, Y. (2022). Fecal Carriage of *Escherichia coli* Harboring the tet(X4)-IncX1 Plasmid from a Tertiary Class-A Hospital in Beijing, China. In *Antibiotics* (Vol. 11, Issue 8). <https://doi.org/10.3390/antibiotics11081068>
- Zhang, Q., & Wang, C. (2020). Natural and Human Factors Affect the Distribution of Soil Heavy Metal Pollution: a Review. *Water, Air, & Soil Pollution*, 231(7), 350. <https://doi.org/10.1007/s11270-020-04728-2>
- Zhang, W., Yu, C., Yin, S., Chang, X., Chen, K., Xing, Y., & Yang, Y. (2023). Transmission and retention of antibiotic resistance genes (ARGs) in chicken and sheep manure composting. *Bioresource Technology*, 382, 129190. <https://doi.org/https://doi.org/10.1016/j.biortech.2023.129190>
- Zhang, Y., Wang, G., Liu, H., & Dai, X. (2023). Application of spray-dried erythromycin fermentation residue as a soil amendment: antibiotic resistance genes, nitrogen cycling, and microbial community structure. *Environmental Science and Pollution Research*, 30(8), 20547–20557. <https://doi.org/10.1007/s11356-022-23361-6>
- Zhao, G., Ma, Y., Liu, Y., Cheng, J., & Wang, X. (2022). Source analysis and ecological risk assessment of heavy metals in farmland soils around heavy metal industry in Anxin County. *Scientific Reports*, 12(1), 10562.
- Zhao, Y., Su, J.-Q., An, X.-L., Huang, F.-Y., Rensing, C., Brandt, K. K., & Zhu, Y.-G. (2018). Feed additives shift gut microbiota and enrich antibiotic

resistance in swine gut. *Science of The Total Environment*, 621, 1224–1232.  
<https://doi.org/https://doi.org/10.1016/j.scitotenv.2017.10.106>

Zheng, X., Zou, D., Wu, Q., Wang, H., Li, S., Liu, F., & Xiao, Z. (2022). Review on fate and bioavailability of heavy metals during anaerobic digestion and composting of animal manure. *Waste Management*, 150, 75–89.  
<https://doi.org/https://doi.org/10.1016/j.wasman.2022.06.033>