

## DAFTAR PUSTAKA

- Ali, H., E. Khan., & M. A. Sajad. 2013. Phytoremediation of Heavy Metals - Concepts and Applications. 91: 869-881.
- Alkorta, I., J. Hernandez-Allica., J. Becerril., I. Amezaga., I. Albizu., & C. Garbisu. 2004. Recent Finding on the Phytoremediation of Soils Contaminated with Environmentally Toxic Heavy Metal and Metalloids Such as Zinc, Cadmium, Lead, and Arsenic. *Reviews in Environmental Science and Biotechnology*. 3: 71-90.
- Alscher, R. G., N. Erturk, L. S. Heath. 2002. Role of Superoxide Dismutase in Controlling Oxidative Stress in Plants. *Journal of Experimental Botany*. 53: 1331-1341.
- Ameh, T., & C. M. Sayes. 2019. The Potential Exposure and Hazards of Copper Nanoparticles: A review. *Environmental Toxicology and Pharmacology*. 71: 103220.
- Arafat, M. S. 2007. Pengaruh Sistem Tanam dan Defoliiasi Daun pada Pertumbuhan dan Hasil Tanaman Kacang Hijau. *J. Produksi Tanaman*. 2(3): 29-37.
- Araoye, P.A. 2009. The Seasonal Variation of pH and Dissolved Oxygen (DO<sub>2</sub>) Concentration in Asa Lake Ilorin, Nigeria. *International Journal of Physical Science*. 4(5): 271-274.
- Asih, D. W., & F. Rachmadiarti. 2019. *Azolla microphylla* sebagai Fitoremediator Logam Pb. *LenteraBio*. 8(1): 85-90.
- Bunga, R.V., S. Sumiyati., & E. Sutrisno. 2013. Fitoremediasi Limbah mengandung Timbal (Pb) dan Nikel (Ni) menggunakan Tanaman Kiambang (*Salvinia molesta*). *Jurnal Teknik Lingkungan Universitas Diponegoro Semarang*. 2(1).
- Chaney, R. L., M. Malik., Y. M. Lie., S. L. Brown., E. P. Brewer., J. S. Angle., & A. J. M. Baker. 1997. Phytoremediation of Soil Metals. *Current Opinion in Biotechnology*. 8: 279-284.
- Chang, W.Y.B., & H. Ouyang. 1988. *Dynamics of Dissolved Oxygen and Vertical Circulation in Fish Ponds*. Netherlands: Aquaculture Elsevier Science Publisher.
- Chen, J., Y. Liu., X. Yan., G. Wei., J. Zhang., & L. Fang. 2018. Rhizobium Inoculation Enhances Copper Tolerance by Affecting Copper Uptake and Regulating the Ascorbate-Glutathione Cycle and Phytochelatin Biosynthesis-

- related Gene Expression in *Medicago sativa* Seedlings. *Ecotoxicology and Environmental safety*. 162: 312-323.
- Cobbett, C.S. 2000. Phytochelatins and Their Roles in Heavy Metal Detoxification. *Plant Physiology*. 123: 825–832.
- Collins, A. R. 2014. Measuring Oxidative Damage to DNA and its Repair with the Comet Assay. *Biochimica et Biophysica Acta*. 1840: 794-800.
- Cotelle, S., & J. F. Ferard. 1999. Comet Assay in Genetic Ecotoxicology: A Review. *Environmental and Molecular Mutagenesis*. 34: 246-255.
- Das, K., & A. Roychoudhury. 2014. Reactive Oxygen Species (ROS) and Response of Antioxidants as ROI-scavenger During Environmental Stress in Plants. *Frontiers in Environmental Science*. 2(53): 1-13.
- Department of Agriculture and Fisheries. 2016. *Salvinia: Salvinia molesta. Biosecurity Queensland*. The State of Queensland: Department of Agriculture and Fisheries.
- Darmono. 1995. *Logam dalam Biologi Mahluk Hidup*. Jakarta: Universitas Indonesia Press.
- Dhawan, A., & D. Anderson. 2009. *The Comet Assay in Toxicology*. Cambridge: The Royal Society of Chemistry.
- Donaldson, J. D., & D. Beyersman. 2005. *Cobalt and Cobalt Compounds Ullmann's Encyclopedia of Industrial Chemistry*. Weinheim: Wiley-VCH.
- Fitter, A. H., & R. K. Hay. 2001. *Fisiologi Lingkungan Tanaman*. Yogyakarta: UGM Press.
- Gichner, T., Z. Patvoka., J. Szakova., & K. Demnerova. 2003. Cadmium Induces DNA Damage in Tobacco Roots, but no DNA damage, Somatic Mutations or Homologous Recombination in Tobacco Leaves. *Mutation Research*. 559: 49-57.
- Goyer, R. A. & T. W. Clarkson. 2003. Toxic Effects of Metals. *Medical Publishing Devision*. 348-359.
- Habashi, F. 2009. Gmelin and his Handbuch. *Bulletin for the History of Chemistry*. 34(1).
- Hattab, S., L. Chouba., M. B. Kheder., T. Mahouachi., & H. Boussetta. 2009. Cadmium and Copper Induced DNA Damage in *Pisum sativum* Roots and Leaves as Determined by the Comet Assay. *Plant Biosystems*. 143: S6-S11.

- Irhamni., P. Setiaty., P. Edison & H. Wirsal. 2017. Kajian Akumulator Beberapa Tumbuhan Air dalam Menyerap Logam Berat secara Fitoremediasi. *Jurnal Serambi Engineering*. 1: 75-84.
- Jafari, N., Z. Senobari, R. K. Pathak. 2010. Biotechnological Potential of *Azolla filiculoides*, *Azolla microphylla* and *Azolla pinnata* for Biosorption of Pb(II), Mn(II), Cu (II) and Zn(II). *Ecol. Environ. Conserv.* 16: 443-449.
- Knopper, L. D., & J. P. McNamee. 2008. Use of the Comet Assay in Environmental Toxicology. *Methods in Molecular Biology*. 410: 171-183.
- Macnair, M.R. 1997. *The Evolution of Plants in Metal-Contaminated Environments*. Birkhauser Verlag: Bostn.
- Marklund, S., & G. Marklund. 1974. Involvement of the Superoxide Anion Radical in the Autoxidation of Pyrogallol and Convenient Assay for Superoxide Dismutase. *Eur. J. Biochem.* 47: 469-474.
- Mittler, R. 2002. Oxidative Stress, Antioxidants and Stress Tolerance. *Trends in Plant Science*. 7(9): 405-410.
- Naghipour, D., S. D. Ashrafi., M. Gholamzadeh., K. Taghavi., & M. Naimi-Joubani. 2018. Phytoremediation of Heavy Metal (Ni, Cd, Pb) by *Azolla filiculoides* from Aqueous Solution: A Dataset. *Data in Brief*. 21: 1409-1414.
- Nurmalinda., A. T. Yuliansyah., & A. Prasetya. 2018. Aklimatisasi Tanaman *Lemna minor* dan *Azolla microphylla* terhadap Lindi TPA Piyungan pada Tahap Awal Fitoremediasi. *PROSIDING BATAN*. 24 Juli 2018. ISSN 0216-3128.
- Palar, H. 1994. *Pencemaran dan Toksikologi Logam Berat*. Jakarta: Rineka Cipta.
- Palar & Haryando. 2012. *Pencemaran dan Toksikologi Logam Berat*. Jakarta: Rineka Cipta.
- Parmar, P., B. Dave., A. Sudhir., K. Panchal., & R. B. Subramanian. 2013. Physiological, Biochemical and Molecular Response of Plants Against Heavy Metals Stress. *International Journal of Current Research*. 5(1): 80-89.
- Patnaik, A., & B. K. Mohanty. 2013. Toxic Effect of Mercury and Cadmium on Germination and Seedling Growth of *Cajanus cajan* L (Pigeon Pea). *Annals of Biological Research*. 4: 123-126.
- Prasad, M. N. V. & H. Freitas. 2003. Metal Hyperaccumulation in Plants Biodiversity Prospecting for Phytoremediation Technology. *Electronic Journal of Biotechnology*. 6: 285-321.

- Rahman, M. A., & H. Hasegawa. 2011. Aquatic Arsenic: Phytoremediation using Floating Macrophytes. *Chemosphere*. 83: 633-646.
- Rai, P. K. 2008. Phytoremediation of Hg and Cd from Industrial Effluent using an Aquatic Free Floating Macrophyte *Azolla pinnata*. *Int. J. Phytoremediation*. 10: 430-439.
- Rezania, S., S. M. Taib., M. F. M. Din., F. A. Dahalan., & H. Kamyab. 2016. Comprehensive Review on Phytotechnology: Heavy Metals Removal by Diverse Aquatic Plants Species from Wastewater. *Journal Hazardous Materials*. 318: 587-599.
- Rosidah, S., Y. U. Anggraito, & K. K. Pukan. 2014. Uji Toleransi Tanaman Tembakau (*Nicotiana tabacum*) terhadap Cekaman Kadmium (Cd), timbal (Pb), dan Tembaga (Cu) pada Kultur Cair. *Unnes Journal of Life Science*. 3(2): 68-78.
- Salmin. 2005. Oksigen Terlarut (DO) dan Kebutuhan Oksigen Biologi (BOD) sebagai Salah Satu Indikator untuk Menentukan Kualitas Perairan. *Jurnal Oseana*. 30(3): 21-26.
- Schutzendubel, A. & A. Polle. 2002. Plant Responses to Abiotic Stresses: Heavy Metal-Induced Oxidative Stress and Protection by Mycorrhization. 53(372): 1351-1365.
- Sela, M., J. Garty., E. Tel-or. 1989. The Accumulation and the Effect of Heavy Metal on the Water Fern *Azolla filiculoides*. *New Phytologist*. 112(2): 7-12.
- Sembel, D. T. 2015. *Toksikologi Lingkungan: Dampak Pencemaran dari Berbagai Bahan Kimia dalam Kehidupan Sehari-hari*. Yogyakarta: Penerbit ANDI.
- Setyaningsih, L. 2007. Pemanfaatan Cendawan Mikoriza Arbuskula dan Kompos Aktif untuk Meningkatkan Pertumbuhan Semai Mindi (*Melia azedarach* Linn) pada Media Tailing Tambang Emas Pongkor. *Tesis*. Bogor: Sekolah Pasca Sarjana Institut Pertanian Bogor.
- Sheilaadji, M. U., M. Y. Listiawan, & E. Ervianti. 2019. Hubungan Kadar Antioksidan Superoxida Dismutase (SOD) dengan Indeks Bakterial (IB) pada Pasien Kusta Baru Tipe Multibasiler (MB) tanpa Reaksi. *Berkala Ilmu Kesehatan Kulit dan Kelamin-Periodical of Dermatology and Venereology*. 31(3): 200-209.
- Simanjuntak, E., & Zulham. 2020. Superoksida Dismutase (SOD) dan Radikal Bebas. *Jurnal Keperawatan & Fisioterapi (JKF)*. 2(2): 124-129.

- Singh N. P., M. T. McCoy, R. R. Tice, E. L. Schneider. 1988. A Simple Technique for Quantitation of Low Levels of DNA Damage in Individual Cells. *Exp Cell Res.* 175: 184–191.
- Singh, R. P., G. Dhanias., A. Sharma., & P. K. Jaiwal. 2007. *Environmental Bioremediation Technologies: Biotechnological Approaches to Improve Phytoremediation Efficiency for Environment Contaminants*. Berlin: Springer-Verlag Berlin Heidelberg.
- Soerjani, M., A. J. G. H. Kostermans., & G. Tjitrosoepomo. 1987. *Weed of Rice in Indonesia*. Jakarta: Penerbit Balai Pustaka.
- Sood, A. P. L., R. Uniyal., & A. S. A. Rasana. 2011. Phytoremediation Potential of Aquatic Macrophyte, *Azolla*. *AMBIO*. 41: 122-137.
- Srivastava, S., S. Mishra, R. D. Tripathi, S. Dwivedi & D. K. Gupta. 2006. Copper-induced Oxidative Stress and Responses of Antioxidants and Phytochelatins in *Hydrilla verticillata* (L.f.) Royle. *Aquatic Toxicology*. 80: 405–415.
- Sutarman & A. Miftakhurrohmat. 2019. *Kesuburan Tanah*. Sidoarjo: UMSIDA Press.
- Talebi, M., B. E. S. Tabatabaei., & H. Akbarzadeh. 2019. Hyperaccumulation of Cu, Zn, Ni, and Cd in *Azolla* Species Inducing Expression of Methallothionein and Phytochelatin Synthase Genes. *Chemosphere*. 230: 488-497.
- Veerabahu, C., D. Randika, A. Mohaideen., S. Indrani., & R. Priya. 2015. Phytochemical and Biochemical Profiles of *Azolla microphylla* Cultured with Organic manure. *International Journal of Current Agricultural Research*. 4(8): 131-133.
- Ventura, L., A. Giovannini, M. Savio, M. Dona, A. Macovei, A. Buttafava, D. Carbonera, & A. Balestrazzi. 2013. Single Cell Gel Electrophoresis (Comet) Assay with Plants: Research on DNA Repair and Ecogenotoxicity Testing. *Chemosphere*. 92: 1-9.
- Wahjuni, S. 2015. *Superoksida Dismutase (SOD) sebagai Prekursor Antioksidan Endogen pada Stress Oksidatif*. Denpasar: Udayana University Press.
- Wang, Y., S. D. Pennock, X. Chen, A. Kazlauskas, Z. Wang. 2004. Platelet-Derived Growth Factor Receptor-Mediated Signal Transduction from Endosomes. *J. Biol. Chem.* 279: 8038–8046.