

DAFTAR PUSTAKA

- Abioye, O.P., P. Agamutu., A. Abdul Aziz. 2010. Phytoremediation Potential of Kenaf (*Hibiscus cannabinus* L) In Soil Contaminated With Used Lubricating Oil. *Linnaeus ECHO-TECH '10*. November 22-24.
- Ariyanto, D. P. 2005. *Ikatan Antara Asam Organik Tanah dengan Logam*. Jurusan Ilmu Tanah Fakultas Pertanian Universitas Sebelas Maret. Surakarta.
- Azmat, R. and Khanum, R. 2005. Effect of Chromium Metal on the Uptake of Mineral Atoms in Seedlings of Bean Plant *Vigna radiata* L. Wilckzek. *Pakistan Journal of Biological Sciences* * (2):281-283, 2005.
- Ali, H and Ezzat Khan. 2013. Phytoremediation of Heavy metals-Concepts and Application. *Chemosphere. Environmental Chemistry*. Vol. 91.
- Allue, J., Alba Moya G., Jaume B., Barcelo J. and Charlotte P. 2013. Fractionation of Chromium in Tannery Sludge-amended Soil and Its Availability to Fenugreek Plants. *Journal of Soils Sediments*.
- Axelsen, K. B. and Palmgren, M.G. 2001. Inventory of The Superfamily of P-type Ion Pumps in Arabidopsis. *Plant Physiology Journal*. Vol.126:696-706
- Babula, P., Adam, V., Opatrivola, R., Zehnalek, J., Havel, L. and Kizek, R., 2008. Uncommon Heavy Metals, Metalloids, and Their Plant Toxicity: A Review. *Environment Chem. Lett.*, 6: 189-213.
- Bada, B. and Raji, K. 2010. Phytoremediation Potential of Kenaf (*Hibiscus cannabinus* L.) Grown in Different Soil Textures and Cadmium Concentration. *African Journal of Environmental Science and Technology*.
- Banuelos, G.S., H.A.Ajwa., B. Mackey., I. Wu., C. Cook., S. Akohoue., and S. Zambruzuzki. 1997. Evaluation of Different Plant Species Used For phytoremediation of High Soil Selenium. *J. Environ. Q.* 26:639-646.
- Barceló, J and Ch. Poschenrieder. 1999. *Structural and Ultrastructural Changes in Heavy Metal Exposed Plants*. Heavy Metal Stress in Plants pp 223-248
- Barbosa,R.M.T., AA.de Almeida., M.S.Mielke., L.L. Loguercio., P. A.O.Mangabeira and F.P.Gomes. 2007. A physiological analysis of *Genipa americana* L.: A potential phytoremediator tree for chromium polluted watersheds. *Environmental and Experimental Botany Journal Volume 6*: 264-271

- Chaney, R.L., M. Malik., Yin M Li., S.L. Brown, E.P. Brewer, J. Scott Angle, and A.J.M. Baker. 1997. Phytoremediation of Soil Metals. *Current Opinion in Biotechnology*. Volume 8, Issue 3, June 1997, pages 279-284.
- Chaab, A., A.A. Moezzi., G.A. Sayyad., M. Chorom. 2016. Effect of Compost and Humic Acid in Mobility and Concentration of Cadmium and Chromium in Soil and Plant. *Global. J. Environ. Sci. Manage.* 2(4):389-396.
- Chandra, P., Sinha S., and Rai, U.N. 1997. "Bioremediation of Cr from water and soil by vascular aquatic plants" in Phytoremediation of Soil and Water Contaminants. Kruger E.L., Anderson T.A., and Coats J.R., Eds., vol 664 of ACS Symposium, pp. 274-282, DC7 American Chemical Society, Washington, DC. USA.
- Caldelas, C., J. L. Araus., A. Febrero., and J. Bort. 2012. Accumulation and Toxic Effects of Chromium and Zinc in *Iris pseudacorus* L. *Acta Physiology Plant*. DOI 10.1007/s11738-012-0956-4.
- Cervantes, C., Campos-Garcia, J., Devars, S., Gutierrez-Corona, F., Loza-Tavera, H., Torres-Guzman, J., and Moreno-Sanchez, R. 2001. *Interactions of Chromium with Microorganism and Plants*. FEMS Microbiology Reviews 25 (2001) 335-347.
- Chibuikwe, G. U. and S.C. Obiora. 2014. *Heavy metal polluted soils: Effect on plants and bioremediation methods*. Hindawi Publishing Corporation.
- Cvjetko, M., K. Radosevic, and V.G. Srcek. 2014. A brief overview of the potential environmental hazards of ionic liquids. *Ecotoxicology and Environmental Journal*. Vol 99:1-12.
- Cluis, C., 2004. Junk-greedy greens: phytoremediation as a new option for soil decontamination. *BioTech J.* 2, 61-67.
- Daud, M.K., L. Mei., M.T. Variath., S. Ali., Cheng Li., M.T. Rafiq., S.J. Zhu. 2014. Chromium (VI) Uptake and Tolerance Potential in Cotton Cultivars: Effect on Their Root Physiology, Ultramorphology, and Oxidative Metabolism. *BioMed Research International Journal*. Vol 2014.
- Dey, U. and Mondal, N. 2016. *Ultrastructural Deformation of Plant Cell Under Heavy Metal Stress in Gram Seedlings*. Cogent Environmental Science (2016), 2:1196472
- Ding, H., Guadong, W., Lili L. and Jinyin, Lv., 2016. Physiological responses and tolerance of kenaf (*Hibiscus cannabinus* L.) exposed to chromium. *Journal Ecotoxicology and Environment Safety* 133:509-518.

- Diwan, H., A. Ahmad and M. Iqbal. 2012. Chromium-induced alterations in photosynthesis and associated attributes in Indian mustard. *Journal of Environmental Biology*.
- Eapen, S., and S.F. D'Souza. 2005. Prospects of genetic engineering of plants for phytoremediation of toxic metals. *Journal of Biotechnology Advances*. Vol. 23(2) pp. 97-114.
- Eleftherios, EP., V.A. Michalopoulou., I.S. Adamakis. 2015. Aberration of mitosis by hexavalent chromium in some Fabaceae members is mediated by species-specific microtubule disruption. *Environmental Science and Pollution Research Journal*. Volume 22. Issue 10. pp 7590–7599.
- Emamverdian, A., Ding, Y., Mokhberdoran, F., and Xie, Y. 2015. Heavy Metal Stress and Some Mechanism of plant Defense Response. *The Scientific World Journal*. Hindawi Publishing Corporation.
- Evans, G.M., and Furlong, J.C., 2003. *Environmental Biotechnology: Theory and Applications*. Wiley, West Sussex, U.K.
- Foy, C.D., R.R. Weil, and C.A. Coradetti. 1995. Differential manganese tolerances of cotton genotypes in nutrient solution. *Journal of Plant Nutri.* 18:685-706.
- Fuhrman, H.G., Mikkelsen, P.T., and Ledin, A. 2016. Simultaneous removal of As, Cd, Cr, Cu, Ni and Zn from stormwater using high efficiency industrial sorbents: Effect of pH, contact time and humic acid. *Science of The Total Environment* Vol. 566-567, 1 Oct 2016, pages 76-85.
- Giasuddin, A.B.M., S.R. Kanel., and H. Choi. 2007. Adsorption of Humic Acid onto Nanoscale Zerovalent Iron and Its Effect on Arsenic Removal. *Environmental Science & Technology Journal*. Vol. 41. Issue 6 pp. 2022-2027.
- Ghani, A. 2011. Effect of Chromium Toxicity On Growth, Chlorophyll and Some Minerals Nutrients of *Brassica juncea* L. *Egypt. Acad. J. Biolog. Sci.*, 2(1):9-15
- Hamid, R., Parray, J.A., Kamili.,A.N., Mahmooduzzafar. 2012. Chromium stress in *Brassica juncea* L.cv. "Pusa Jai Kissan" under hydroponic culture. *Africa Journal Biotechnology*. 11:15658-15663.
- Hall, J.L. 2002. Cellular mechanisms for heavy metal detoxification and tolerance. *J.Exp. Bot.* 53 (2002)1-11
- Hidayati, N. (2013). *Mekanisme Fisiologis Tumbuhan Penyerap Logam Berat*. Pusat Penelitian Biologi LIPI.

- Kanti Dan, P., S. Manda., A.K2 De., and S. Mandal. 2016. Studies of Toxicity of Chromium (VI) to *Pistia stratiotes* L. Plant and its removal. *International Journal of Current Microbiology and Applied Sciences*. Vol 5. No 5 pp:975-982
- Khan, M.Y., Asghar, H.N., Jamshaid, M.U., Akhtar, M.J., and Zahir, Z.A. 2013. Effect of MiCrobial Inoculation on Wheat Growth and Phytostabilization of Chromium Contaminated Soil. *Pak. J. Bot.*, 45(S1): 27-34, January 2013.
- Kasmiyati, S., Santosa, I. D. Priyambada., K, Dewi., Suchayo., and R. Sandradewi. 2016. Growth Response of Sorghum bicolor Cultivars To Trivalent Chromium Stress. *Biosaintifika Journal of Biology & Biology Education*.
- Khrishnamurty, S., and Wilkens, M.M. 1994. *United Chrome Products Site in Corvallis, Oregon*. *Northeastern Geology* 16. pp. 14-17.
- Kohli, R. 2013. Chromium Toxicity and Tolerance Plants. *Environmental Chemistry Letter* 11:229-254
- Krijger, G.C., P. M. Vliet, and H. T. Wolterbeek. 1999. Metal speciation in xyem exudate of *Lycopersicon esculentum*. *Plant Soil*. 212:165-173.
- Labra, M., Grassi, F., Imazio, S., Fabio T.D., Citterio, S., Sgorbati, S., Agradi, E. 2004. Genetic and DNA-methylation changes induced by potassium dichromate in *Brassica napus* L. *Chemosphere*. 54:1343-1353.
- Larcher, W. 1995. *Physiological plant ecology*. Springer-Verlag, Berlin
- Lopez-Lunaa, J., M.C. González-Chávezb, F.J. Esparza-Garcíaa, and R. Rodríguez-Vázquez. 2009. Toxicity assessment of soil amended with tannery sludge, trivalent chromium and hexavalent chromium, using wheat, oat and sorghum plants. *Journal of Hazardous Materials Volume 163, Issues 2–3, 30 April 2009, Pages 829–834*.
- Lin, H., Peng, Y., Chen, J., and Liang, L. 2015. *Effect of Heavy Metal Stress on Antioxidase Enzymes*. International Conference on Manufacturing Science and Engineering.
- Lionel, S., and R.J. Karunakaran. 2017. Effect of Biochar Application On The Chromium Uptake of *Canna indica* L From Chromium Spiked Soil. *Journal of Pharmacognosy and Phytochemistry*; 6(4): 146-152.
- Liu, J., C. Duan., X.H. Zhang., Y. N. Zhu., and Cheng Hu. 2009. Subcellular distribution of chromium in accumulating plant *Leersia hexandra* Swartz. *Plant Soil Jurnal* 322:187–195.

- Lukina, A.O., C.Boutina O.Rowland., and D.J.Carpenter. 2016. Evaluating trivalent chromium toxicity on wild terrestrial and wetland plants. *Chemosphere Volume 162. Pages 355-364*
- Mami, M., G. Ahmadi, M. Shahmoradi and H.R. Ghorbani. 2011. Influence of different concentration of heavy metals on the seed germination and growth of tomato. *J. Environ. Sci. Technol, 5:420-426.*
- Macek, T., D. Pavlikova., M. Maekova. 2004. Phytoremediation of Metals and Inorganic Pollutants.
- Mangabeira, P.A.O., L. Labejof, and R. Levi-Setti. 2004. Accumulation of chromium in root tissues of *Eichhornia Crassipes* (Mart) Solms. In Cachoeira river-Brazil. *Applied Surface Science Journal. Vol. 231:497-501*
- Masnira, M.Y., Halim, R. A., Rafii M.Y., Mohd Jani, S., and Martini. 2015. Yield and quality of two kenaf varieties as affected by harvesting age. *J. ISSAAS Vol. 21, No. 2: 129-142.*
- Mathur, S., H. M. Kalaji., A. Jajoo. 2016. Investigation of deleterious effects of chromium phytotoxicity and photosynthesis in wheat plant. *Photosynthetica Journal. Volume 54. Issue 2. pp 185–192.*
- Mitch, M. Lasat. 2002. *The Use of Plants for Removal of Toxic Metals from Contaminated Soil.* American Association for the Advancement of Science Environmental Science and Engineering Fellow.
- Nagarajan, M., and K. S. Ganesh. 2015. *Toxic effects of chromium on growth of some paddy varieties.* International Letters of Natural Sciences. Vol. 35: pp 36-44.
- Nardi, S., Pizzeghello, D., Muscolo, A., and Vianello, A. 2002. *Physiological Effects of Humic Substances on Higher Plants.* Soil Biology & Biochemistry 34 (2002) 1527-1536.
- Niazy, M. 2015. Phytoremediation: A Role of Kenaf Plants (*Hibiscus cannabinus*) In The Remediation of Cadmium Contaminated Water. *J. Biol. Chem. Environ. Sci., 2015, Vol. 10(3):167-181.*
- Nizam, M.U., Zaman, M.W., Rahman, M.M., and Hossain, M.M. 2015. Germination Potential of Jute, Kenaf and Mesta to Chromium Toxicity. *Journal of Environment, Science & Natural Resources, 8(1): 51-57.*
- Oliveira, H. 2012. Chromium as an Environment Pollutant: Insights on Induced Plant Toxicity. *Journal of Botany. Vol 2012. Article ID 375843.*

- Panda, S. K., Patra, H. K. 2000. Does chromium(III) produce oxidative damage in excised wheat leaves? *Journal of Plant Biology* 2000 Vol.27 No.2 pp.105-110 ref.23
- Prasad, M.N.V. 2004. *Phytoremediation of Metals in the environment for sustainable development*. Proc. Indian natn.Sci.Acad. B70. No 1 pp 71-98.
- Park, J., Dane, I., and Periyasamy, P. 2011. Role of organic amendments on enhanced bioremediation of heavy metal (loid) contaminated soils. *J. Hazard. Mater.*, 185: 549-574.
- Patnaik, A.R., Achary, V.M.M., and Panda, B.B. 2013. Chromium (IV)-induced hormesis and genotoxicity are mediated through oxidative stress in root cells of *Allium cepa* L. *Plant Growth Regulation An international Journal on Plant Growth and Development*, 71:157-170.
- Pati, S., A. Ghadei., A. Arzoo., S.K. Nayak., A. Mohapatra., K.B. Satapathy. 2014. Physiological responses induced by chromium+6 toxicity to *Cucumis sativus* L. and *Macrotyloma uniflorum* Lam. *IQSR Journal of Environmental Science, Toxicology and Food Technology*. Vol 8:58-63.
- Peralta, J.R., Gardea R. T. L., Thiemann K.J., Gomez E., Arteaga S.R.E., Parson J.G. 2000. *Study of the effect of heavy metals on seed germination and plant growth of alfalfa plant (Medicagos sativa) grown in solid media*. Proceedings of the 2000 conference of hazardous waste research. 135:1-6.
- Raia, V., Vajpayeeb, P., Nath, S., and Mehrotraa, S. 2004. Effect of Chromium Accumulation on Photosynthetic Pigments, Oxidative Stress Defense System, Nitrate Reduction, Proline Level and Eugenol Content of *Ocimum tenniflorum* L. *Plant Science Journal*, Vol 167. Pages 1159-1169.
- Raja, S., A.A. Khan., M. N. Cheema. 2016. Plants Tolerance Mechanism and Physiological Effects Under Heavy Metals Stress. *International Journal of Agricultural and Environmental Research*.
- Ramana, S., A.K. Biswan., A.B. Singh., Ajay., N.K. Ahirwar, A. Subba Rao. 2013. Phytoremediation ability of some floricultural plant species. *Ind J Plant Physiol.* (April-June 2013) 18(2): 187-190.
- Rascio, N., and Izzo, F. 2011. Heavy metal hyperaccumulating plants: How and why do they do it? And what makes them so interesting? *Plant Science Journal* 180(2011) 169-181.
- Rizwan, M., S. Ali., F. Abbas., M. Adrees., M. Z. Rahman., M. Farid., R.A.Gill, and B. Ali. 2017. *Role of organic and inorganic amendments in alleviating heavy metal stress in oil seed crops* - Oil Seed Crops. books.google.com

- Rodriguez, E., R. Azevedo., P. Fernandes, and C. Santos. 2011. Cr (VI) induced DNA damage, cell cycle arrest and polyploidization: a flow cytometric and comet assay study in *Pisum sativum*. *Chemical Research in Toxicology*. Vol. 24.no.7 pp:1040-1047.
- Santoso, U.T., dan Herdiansyah. 2004. Study On The Rate of Reduction of Cr (VI) to Cr (III) by Humic Acid Using Continuum Multicomponent Model. *Indonesian Journal of Chemistry*, 2004, 4 (1), 12 – 25.
- Shanker, A.K., C. Cervantes., H. Loza-Tavera., and S. Avudainayagam. 2005. Chromium Toxicity in Plants. *Environment International* 31 (2005) 739–753.
- Santoso, B., Jamil, A.H., dan Machfud, M. 2015. *Manfaat Kenaf (Hibiscus cannabinus L.) Dalam Penyerapan Karbondioksida (CO2)*. Perspektif Vol. 14 No. 2 /Des 2015. Hlm 125 - 133 ISSN: 1412-8004
- Sangwan, P., and Kumar, V. 2016. *An Insight into Plant Growth and Metabolism in Relation to Hexavalent Chromium*. Recent Advances in Plant Stress Physiology. Pages 265-282.
- Schiavona, M., Elizabeth A.H., Pilon-Smitsb, Markus W., Rüdiger Hellc and M. Malagoli. 2008. Interactions between Chromium and Sulfur Metabolism in *Brassica juncea*. *Journal of Environmental Quality Abstract - Plant and Environment Interactions*. Vol. 37 No. 4, p. 1536-1545
- Setyowati, D., and Ulfin, I. 2007. *Optimasi Kondisi Penyerapan Ion Aluminium Oleh Asam Humat*. Akta Kimindo Vol. 2 No. 2:85-92
- Shi, X and N.S Dall. 1990. On the hydroxyl radical formation in the reaction between hydrogen peroxide and biologically generated chromium (VI) species. *Biochemistry and Biophysics Journal*. Vol. 277(2): 342-350
- Shaheen, S., Mahmood, Q., Pervez, A., Mirza, N., Bhatti, Z.A., Hayat, T., Meryem., and S.S., Ullah, F. 2016. Chromium Uptake by Giant Reed Under Rhizobacterial Inhibition. *International Journal of Environment Science and Technology*.
- Shahid, M., S. Shamshad., M. Rafiq., S. Khalid., I. Bibi., N. K. Niazi., C. Dumate and M. I. Rashid. 2017. *Chromium speciation, bioavailability, uptake, toxicity and detoxification in soil-plant system: A review*. Chemosphere Vol. 178: 513-533.
- Shen, Z., X. Li., Wang, C., H. Chen., and H. Chua. 2002. Lead phytoextraction from contaminated soil with high-biomass plant species. *Journal of Environmental Quality*. Vol. 31, no. 6, pp.1893-1900.

- Singh, H.P., P. Mahajan., S. Kaur., D.R. Batish., R. K. Kohli. 2013. *Chromium toxicity and tolerance in plants*. *Environ Chem Lett* (2013) 11:229–254
- Shrestha, R., Fischer, R., and Sillanpaa, M., 2007. Investigations on different positions of electrodes and their effects on the distribution of Cr at the water sediment interface. *Int. J. Environment. Chem.Lett.*11(3), 229-254.
- Subhashini, V., and Swamy, A. 2014. Phytoremediation of Metal (Pb, Ni, Cd, and Cr) Contaminated Soils Using *Canna indica*. *Current World Environment Journal*. Vol.9(3), 780-784.
- Sundaramoorthy, P., Alagappan, C., K. S. Ganesh., Unnikannan, P., Baskaran, L. 2010. Chromium stress in paddy: (i) Nutrient status of paddy under chromium stress: (ii) Phytoremediation of chromium by aquatic and terrestrial weeds. *Elsevier. C. R Biologies* 333 (2010): 597-607
- Supriyo, A. 2012. *Kajian Pemanfaatan Bahan Humat Untuk Meningkatkan Efisiensi Pemupukan Pada Tanaman Kelapa Sawit di Tanah Sulfat Asam*. Balai Pengkajian Teknologi Pertanian (BPTP) Kalsel.
- Suzie, R. 2002. *The Response of Plants to Metal Toxicity: A Review focusing on Copper, Manganese and Zinc*. Australian Minerals and energy Environment Fondation.
- Tang, W., G.M. Zeng., J.L. Gong., J. Liang., P. Xu., C. Zhang., B. Huang. 2013. Impact of humic/fulvic acid on the removal of heavy metals from aqueous solutions using nanomaterials: A Review. *Science of The Total Environment Journal*.
- Torresdey, J., de la Rosa, G., and Videa, J.R. 2004. Use of Phytofiltration Technologies in The Removal of Heavy Metals. *Pure Application Chemistry Journal*. Vol. 76. pp 801-813.
- Uysal, Y. 2013. Removal of chromium ions from wastewater by duckweed, *Lemna minor* L. by using a pilot system with continuous flow. *Journal of Hazardous Materials* 263 (2013) 486-492.
- Vajpayee, P., U.N. Rai., M.B. Ali., R.D. Tripathi., V. Yadav., S. Sinha., and S.N Singh. 2001. *Chromium-Induced Physiologic Changes in Vallisneria spiralis L. and Its Role in Phytoremediation of Tannery Effluent*. *Bulletin of Environmental Contamination and Toxycology*. 67:246-256.
- Vassilev, A., Schwitzguebel, J.P., Thewys, T., van der Lelie, D., and Vangronsveld, J., 2004. *The use of plants for remediation of metal-contaminated soils*. *Sci. World J.* 4, 9-34.

- Vidali, M. 2001. Bioremediation. An overview. *Pure Application Chemistry Journal*. Vol. 73. No. 7 pp. 1163-1172
- Wuana, R.A., and Okieimen, F.E. 2011. *Heavy Metals in Contaminated Soils: A Review of Sources, Chemistry, Risks and Best Available Strategies for Remediation*. International Scholarly Research Network Ecology. Volume 2011.
- Yang, D., G. Shi and D. Song. 2001. *The resistant reaction of *Brasentiaschebri* winter bud to Cr^{6+} Pollution*. *Lake Sci*, 13:169-174.
- Yeoung, S.Y and J.M. Park. 2004. Reduction of Hexavalent Chromium with the Brown Seaweed *Ecklonia* Biomass. *Environmental Science and Technology Journal*. Vol. 38: 4860-4864.
- Zayed, A.M., Lytle, C.M., Qian, J., and Terry, N. 1998. Chromium Accumulation, Translocation and Chemical Speciation in Vegetable Crops. *Planta*, 206(2), 293-299
- Zakaria, Z.A., Ahmad, W.A., Zakaria Z., Razali, F., Karim, N.A., Sum, M.Md., and Saufi, M. 2012. Bacterial Reduction of Cr(IV) at Technical Scale- The Malaysian Experience. *Applied Biochemistry and Biotechnology* (2012) 167:1641-1652.
- Zhang, J., L. Chen., H. Yin., S. Jin., F. Liu., H. Chen. 2017. Mechanism study of humic acid functional groups for Cr (VI) retention: Two-dimensional FTIR and ^{13}C CP/MAS NMR correlation spectroscopic analysis. *Environmental Pollution Journal*. 225:86-92.
- Zou, J.H., M. Wang., W.S. Jiang., and D.H. Liu. 2006. Effects of hexavalent chromium (VI) on root growth and cell division in root tip cells of *Amaranthus viridis* L. *Pakistan Journal of Botany*. 38(3): 673-681.