

DAFTAR PUSTAKA

- Adisarwanto. 2005. Budidaya Kedelai dengan Pemupukan yang Efektif dan Pengoptimalan Peran Bintil Akar. Penebar Swadaya. Jakarta.
- Ahmad, P., Allah, E.A., Hashem, A., Sarwat, M., dan Gucl, S., 2016. Exogenous application of selenium mitigates cadmium toxicity in *Brassica juncea* L. (Czern & Cross) by upregulating antioxidative system and secondary metabolites. *J. Plant Growth Regul.* 1–15.
- Alexander, M. 1977. *Intoduction to Soil Microbiology*. 2nd Edition. John Wiley and Sons; New York-Chichaster-Brisbane-Toronto-Singapore. 472 pp.
- Alexieva, V., I. Sergief, S. Mapelli dan E. Karanov. 2001. The effect of drought and ultraviolet radiation on growth. *Plant Cell and Environment* 24 : 1337-1344.
- Ali, S., Bhatti, A. U., Khan, F., dan Ghani, A. 2008. Performance of mugbean in wheat mugbean system under integrated plant nutrient management on eroded land. *Sarhad Journal of Agricultural.* 24(3), pp.445-452
- Alloway, B. J. 1990. *Heavy Metal in Soils*. John Willey and Sons inc., New York.
- Ariyanti, E., Sutopo, dan Suwato. 2010. Kajian status hara makro Ca, Mg, dan S tanah sawah kawasan industri daerah kabupaten Karanganyar. *Jurnal Ilmu Tanah dan Agroklimatologi* 7(1): 51 – 60.
- Arnon DI. 1949. *Copper enzymes in isolated chloroplast, poliphenol oxidase in beta vulgaris*. *J. Plant Physiol.* 24:1-15.
- Astrini, Y., R. Yuniati, dan A. Salamah. 2014. Analisis pengaruh pemberian logam berat (Pb, Cd, Cu) terhadap pertumbuhan *Melastoma malabathricum* L. <<http://lib.ui.ac.id/naskahringkas/2016-05/S57133-Yessica%20Astrini>>. Diakses tanggal 10 Januari 2019.
- Azooz, M. M, M. F. Abou-Elhamd, dan M. A. Al-Fredan. 2012. Biphasic effect of copper on growth, proline, lipid peroxidation and antioxidant enzyme activities of wheat (*Triticum aestivum* cv. Hasaawi) at early growing stage. *Australian Journal of Crop Science* 6(4):688-694.
- Babula, P., Klejdus, B., Kovacik, J., Hedbavny, J., dan Hlavna, M., 2015. Lanthanum rather than mancadmium induces oxidative stress and metabolite changes in *Hypericum perforatum*. *J. Hazard. Mater.* 286, 334–342.
- Badan Standardisasi Nasional. 2009. Batas maksimum cemaran logam berat dalam pangan (SNI 7378:2009)
- Badan Pusat Statistik. 2016. Produksi Kedelai Menurut Provinsi 1993-2016. <<http://bps.go.id>>
- Balai Penelitian Tanah. 2009. Analisis Kimia Tanah, Tanaman, Air dan Pupuk. Badan Penelitian dan Pengembangan Pertanian. Departemen Pertanian. Bogor
- Bates, L. S., R. P., Waldren dan I. D., Teare. 1973. *Rapid determination of freeproline water stress studies*. *J. Plant Soil.* 39:205-207.
- Bath, D. S., Siregar, J. M. dan Lubis, M. T. 2012. Penggunaan Tanah Bentonit sebagai Adsorben Logam Cu. *Jurnal Teknik Kimia USU*, 1(1), 8-11
- Beauchamp C, dan Fridovich I, 1971, Superoxide Dismutase: Improved Assays and An Assay Applicable to Acrylamide Gels, *Anal. Biochem.* 44(1): 276-287.

- Brady, N. C. dan R. R. Weil. 2002. *The Nature and Properties of Soils*. Upper Saddle River, New Jersey.
- Chanrai, N.G, dan S.G. Barde, 2004. *Recovery of oil from spent bleaching earth*. US Patent No. 6.780,321 B2.
- Chun, O.K., Kim, D.O., dan Lee, C, Y., 2003, *J Agric Food Chem*, Superoxide Radical Scavenging Activity of The Major Polyphenols in Fresh Plums.
- Cobbet, C. S. 2000. Phytochelatins and their roles in heavy metal detoxification. *Plant Physiol* 123: 825 – 832.
- Codex Alimentarius International Food Standards. 1995. General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193-1995).
- Darnoko, D dan Cheryan, M. 2000. Kinetics of Palm Oil Transesterification in a Batch Reactor. *JAOCS*. 77: 1263 – 1267.
- Dionisio-Sese, M. L, dan Tobita. S (1998) Antioxidant responses of rice seedlings to salinity stress. *Plant Sci* 135: 1–9
- Elyza, F.,G. Nuni, dan Munawar. 2015. Identifikasi dan uji potensi bakteri lipolitik dari limbah SBE (*Spent Bleaching Earth*) sebagai agen bioremediasi. *Jurnal ilmu lingkungan* 13 (1): 12-18.
- Fageria, N. K., V. C. Baligar, dan C. A. Jones. 1997. *Growth and Mineral Nutrition of Field Crop*. Marcel Dekker. Inc., New York.
- Fargašová, A. 2004. Toxicity comparison of some possible toxic metals (Cd, Cu, Pb, Se, Zn) on young seedlings of *Sinapis alba* L. *Plant, Soil and Environment*, vol. 50, no. 1, pp. 33–38.
- Fauzi, Y., Y. E. Widyastuti, I. Satyawibawadan dan R. H. Paeru. 2014. *Kelapa Sawit*. Penebar Swadaya, Jakarta.
- Fernando, D.R., Marshall, A.T., Forster, P.I., Hoebee, S.E., dan Siegele, R., 2013. Multiple metal accumulation within a manganese-specific genus. *Am. J. Bot.* 100, 690e700.
- Finger-Teixeira, A., M. L. L. Ferrarese, A. R. Soares, D. da Silva, dan O. Ferrarese-Filho. 2010. Cadmium-induced lignification restricts soybean root growth. *Ecotoxicology and Environmental Safety* 73: 1959 – 1964
- GAPKI. 2018. Siaran Pers Gabungan Pengusaha Kelapa Sawit Indonesia : Kinerja Ekspor Minyak Kelapa Sawit Kuartal I 2018. <https://gapki.id/news/4984/kinerja-ekspor-minyak-sawit-indonesia-kuartal-i-2018>. Diakses tanggal 28 Oktober 2018.
- Gill, S.S., dan Tuteja, N., 2010. Reactive oxygen species and antioxidant machinery in abiotic stress tolerance in crop plants. *Plant Physiol. Biochem.* PPB 48, 909–930.
- Grieve, C. M dan S. R. Grattan. 1983. Rapid assay for determination of water soluble quarternary ammonium compounds. *Plant Soil* 70 : 303-307.
- Gunstone, F.D., Harwood, J.L., dan Dijkstra, A.J., 2007. *The Lipid Handbook*. CRC Press, Boca Raton.
- Irwan, A. W. 2006. *Budidaya Tanaman Kedelai*. Fakultas Pertanian Universitas Padjajaran. Jatinangor

- Janoušková, M., D. Pavlíková, dan M. Vosátka. 2006. Potential contribution of arbuscular mycorrhiza to cadmium immobilisation in soil. *Chemosphere* 65(11): 1959 – 1965.
- Ketaren, S. 1996. Pengantar teknologi minyak dan lemak pangan. Universitas Press. Jakarta.
- Krisnawati, A. 2013. Pencemaran kadmium dan prospek pemuliaan tanaman kedelai berkadungan kadmium rendah. *Buletin Palawija* No. 26: 61–71.
- Loh, S. K., K. Y. Cheong, Y. M. Choo, dan J. Salimon. 2015. Formulation and optimisation of spent bleaching earth–based bio organic fertiliser. *Journal of Oil Palm Research* 27(1): 57 – 66.
- Loh, S. K., S. James, M. Ngatiman, K. Y. Cheong, Y. M. Choo, dan W. S. Lim. 2013. Enhancement of palm oil refinery waste – spent bleaching earth (SBE) into bio organic fertilizer and their effects on crop biomass growth. *Industrial Crops and Products* 49: 775 – 781.
- Malhotra, S. S. dan A. A. Khan. 1984. Biochemical and Physiological impact of major pollutants. Northern Forestry Centre, Canada.
- Manquian-Cerda, K., Escudey, M., Zuniga, G., Arancibia-Miranda, N., Molina, M., dan Cruces, E., 2016. Effect of cadmium on phenolic compounds, antioxidant enzyme activity and oxidative stress in blueberry (*Vaccinium corymbosum* L.) plantlets grown in vitro. *Ecotoxicol. Environ. Saf.* 133, 316–326.
- Marschner, H. 1995. Mineral Nutrition of Higher Plants. Academic Press. London.
- Mengel, K. dan E. A. Kirkby. 1987. Principle of Plant Nutrition. 4th Edition. International Potash Institute, Bern.
- Ministry of Health of the People's Republic of China (MHPRC). 1991. Tolerance Limit of Zinc in Foods (GB 13106- 1991) (in Chinese). Standard Press of China, Beijing.
- Ministry of Health of the People's Republic of China (MHPRC). 1994. Tolerance Limit of Copper in Foods (GB 15199- 1994) (in Chinese). Standard Press of China, Beijing.
- Ministry of Health of the People's Republic of China (MHPRC). 2005. The Limits of Pollutants in Foods (GB 2762- 2005) (in Chinese). Standard Press of China, Beijing.
- Mishra, B., Sangwan, R.S., Mishra, S., Jadaun, J.S., Sabir, F., Sangwan, N.S., 2014. Effect of cadmium stress on inductive enzymatic and nonenzymatic responses of ROS and sugar metabolism in multiple shoot culture
- Mishra, P. K. dan V. Prakash. 2010. Response of non-enzymatic antioxidants to zinc Induced stress at different pH in *Glycine max* L. cv. Merrill. *Academic Journal of Plant Sciences* 3(1):1–10.
- Munawar, A. 2011. Kesuburan Tanah dan Nutrisi Tanaman. IPB Pres. Bogor.
- Nematshahi, N, M. Lahouti, dan A. Ganjeali. , 2012. Accumulation of chromium and its effect on growth of (*Allium cepa* cv. Hybrid). *European Journal of Experimental Biology*, vol. 2, no. 4, pp. 969– 974.
- Notohadiprawiro, T. 1993. Logam Berat Dalam Pertanian. <<http://soil.blog.ugm.ac.id/files/2006/11/1993-Logam-berat.pdf>>. Diakses tanggal 10 Januari 2019.

- Olivares, E. 2003. The effect of lead on phyto-chemistry of *Tithonia diversifolia*: exposed to roadside automotive pollution or grown in pots of Pb supplemented soil. *Braz. J. Plant. Physl.* 15(3): 149 – 158.
- Oliveira, H. 2012. Chromium as an environmental pollutant: insights on induced plant toxicity. *Journal of Botany*, vol. 2012, Article ID 375843, 8 pages.
- Patterson, H. B. W, 1992. *Bleaching and purifying fats and oils*: Theory and practice. The American Oil Chemists' Society. New York.
- Pikukuh, P., Djajadi, S. Y. Tyasmoro, dan N. Aini. 2015. Pengaruh frekuensi dan konsentrasi penyemprotan pupuk nano silika (Si) terhadap pertumbuhan tanaman tebu (*Saccharum officinarum* L.). *Jurnal Produksi Tanaman* 3(3): 249 – 258.
- Poerwowidodo. 1993. *Telaah Kesuburan Tanah*. Angkasa. Bandung.
- Prihatman, K. 2000. Kedelai. <http://www.ristek.go.id>
- Purwono dan P. Heni. 2007. *Budidaya 8 Jenis Tanaman Pangan Unggul*. Penebar Swadaya. Jakarta.
- [PPPTP] Pusat Penelitian dan Pengembangan Tanaman Pangan. (2010). Deskripsi kedelai varietas Grobogan. <http://pangan.litbang.pertanian.go.id/varietas-591.html> [Diakses Januari 2019]
- Rahoui, S., Martinez, Y., Sakouhi, L., Ben, C., Rickauer, M., El Ferjani, E., Gentzittel, L., dan Chaoui, A., 2017. Cadmium-induced changes in antioxidative systems and differentiation in roots of contrasted *medicago truncatula* lines. *Protoplasma* 254 (1), 473–489.
- Rai, V., Vajpayee, P., Singh, S. N., dan Mehrotra, S., 2004. Effect of chromium accumulation on photosynthetic pigments, oxidative stress defense system, nitrate reduction, proline level and eugenol content of *Ocimum tenuiflorum* L. *Plant Sci.* 167(5), 1159-1169.
- Rascio, N. dan F. Navari-Izzo. 2011. Heavy metal hyperaccumulating plants: how and why do they do it? And what makes them so interesting?. *Plant Science* 180(2):169–181.
- Rauf, A., Shepard B.M., dan Johnson M.W. 2000. Leafminers in vegetables, ornamental plants and weeds in Indonesia: surveys of host crops, species composition and parasitoids. *International Journal of Pest Management* 46: 257-266.
- Rosmarkam, A dan N. W. Yuwono. 2002. *Ilmu Kesuburan Tanah*. Kanisius, Yogyakarta.
- Safrizal. 2007. Studi pemupukan nitrogen, fosfor dan kalium pada tanaman manggis tahun produksi ketiga. Institut Pertanian Bogor. Tesis.
- Sagardoy, R., F. Morales, A.-F. López-Millán, A. Abadía, dan J. Abadía. 2009. Effects of zinc toxicity on sugar beet (*Beta vulgaris* L.) plants grown in hydroponic. *Plant Biology* 11(3):339–350.
- Seregin, I. V dan A. D. Kozhevnikova. 2006. Physiological role of nickel and its toxic effects on higher plants. *Russian Journal of Plant Physiology* 53(2):257–277.
- Shanker, A. K., C. Cervantes, H. Loza-Tavera, dan S. Avudainayagam. 2005. Chromium toxicity in plants. *Environment International* 31: 739 – 753.

- Sharma, P., S. B. Jha, R.S. Dubey dan M. Pessarakli. 2012. Reactive Oxygen Species, Oxidative Damage, and Antioxidative Defense Mechanism in Plant Under Stressful Conditions. *Journal of Botany*. 2012: 1-26.
- Sharmila, P., Kumari, P.K., Singh, K., Prasad, N.V.S.R.K., dan Pardha-Saradhi, P., 2016. Cadmium toxicity-induced proline accumulation is coupled to iron depletion. *mishraProtoplasma* 1–8.
- Shofi, Muh. 2017. Daya hambat perak nitrat (AgNO_3) pada perkecambahan biji kacang hijau (*Vigna radiata*). *Journal of Biology* 10(2):98-104.
- Singh, H. P, P. Mahajan, S. Kaur, D. R. Batish, dan R. K. Kohli. 2013. Chromium toxicity and tolerance in plants. *Environmental Chemistry Letters*, vol. 11, no. 3, pp. 229–254.
- Soda, W., A. D. Noble, S. Suzuki, R. Simmons, L. Sindhusen, dan S. Bhuthorndharaj. 2006. Co-composting of acid waste bentonites and their effects on soil properties and crop biomass. *J. Environmental Quality* 35: 2293 – 2301.
- Sudaryono. 2011. Pengaruh pupuk hayati terhadap penyerapan logam berat tembaga dan timbal pada tanaman *baby corn*. *JRL* 7(3): 295 – 305.
- Sumarno dan Hartono. 1983. Kedelai dan cara bercocok tanamnya. Pusat Penelitian dan Pengembangan Tanaman Pangan. Buletin Teknik 6:53 hal.
- Sung, F. J. M., 1993. Waterlogging effect on nodule nitrogenase and leaf nitrate reductase activities in soybean. *Field Crop Research*, Vol 35; pp. 183-189
- Suryadiputra, I. N. N. 1994. Pengolahan Air Limbah dengan Metoda Biologi. Strengthening Program: Rancang Bangun IPAL, Bandung.
- Tamas, L., Mistrik, I., dan Zelinova, V., 2017. Heavy metal-induced reactive oxygen species and cell death in barley root tip. *Environ. Exp. Bot.* 140, 34–40.
- Tunc Turk, M., R. Tunc Turk., B. Yildirim., dan V. Ciftci. 2011. Effect of salinity stress on plant fresh weight and nutrient composition of some Canola (*Brassica napus* L.) cultivars. *African journal of biotechnology* 10: 1827 - 1832.
- Valentovič, Peter, M. Luxová, L. Kolarovič, dan O. Gašparíková. 2006. “Effect of Osmotic Stress on Compatible Solutes Content, Membrane Stability and Water Relations in Two Maize Cultivars.” *Plant, Soil and Environment* 52(4): 186–91.
- Verloo, M. 1993. Chemical Aspect of Soil Pollution. ITC-Gen Publications 4: 17 – 46.
- Wahyudi, M. Y. 2000. Studi Penggunaan Kembali *Bleaching Earth* Bekas sebagai Adsorben dalam Proses Refining CPO. Tesis Magister. Program Studi Teknik Lingkungan. Institut Teknologi Bandung, Bandung.
- Webb, Nick. 2012. *User Manual for the WinDIAS 3 Image Analysis System*. Delta-T Devices Limited. Cambridge.
- Winarso, S. 2005, Kesuburan Tanah Dasar Kesehatan Dan Kualitas Tanah. Gava Media, Yogyakarta.
- Xu, L., Han, L., dan Huang, B. 2011. Antioxidant Enzyme Activities and Gene Expression Patterns in Leaves of Kentucky Bluegrass in Response to Drought and Post-drought Recovery. *J. Amer. Soc. Hort. Sci.* 136(4):247-255.
- Yamaguchi, T., S. Shimamura, M. Nakazono, dan T. Mochizuki. 2013. Aerenchyma formation in crop species: A review. *Field Crop Research*. Article in Press

- Yukamgo, E. dan N. W. Yuwono. 2007. Peran silika sebagai unsur bermanfaat pada tanaman tebu. *Jurnal Ilmu Tanah dan Lingkungan* 7(2): 103 – 116.
- Yurekli, F dan Porgali, Z. B.. 2006. The effects of excessive exposure to copper in bean plants. *Acta Biologica Cracoviensia Series Botanica* 48(2):7–13.
- Yusnimar, I. Zahrina, dan D. Heltina. 2012. Sumber bahan bakar alternatif dari *spent bleaching earth* asal industri *refinery* minyak sawit. <<https://repository.unri.ac.id/bitstream/handle/123456789/2743/YUSNIMAR.PDF?sequence=1&isAllowed=y>>. Diakses tanggal 29 Desember 2018.
- Zhuang, P., Li Zhi-An, Zou, B., Xia, Han-Pang dan Wang, G. 2013. Heavy Metal Contamination in Soil and Soybean near the Dabaoshan Mine, South China. *Pedosphere* 23(3): 298-304