

DAFTAR PUSTAKA

- Abdurachman, A., A. Dariah, dan A. Mulyani. 2008. Strategi dan teknologi pengelolaan lahan kering mendukung pengadaan pangan nasional. *Jurnal Litbang Pertanian*. 27: 43-49.
- Abdurachman, A., U. Haryati, dan I. Juarsah. 2006. Penetapan kadar air tanah dengan metode gravimetrik. Badan Penelitian dan Pengembangan Pertanian, Jakarta.
- Abeles, F. B., P. W. Morgan, and M. E. Saltveit Jr. 1992. *Ethylene in plant biology*. 2nd ed. Academic Press, California.
- Achtsami, S., T. Yuwono, dan Ngadiman. 2016. Isolasi dan identifikasi bakteri penghasil ACC deaminase dari akar tanaman teh (*Camellia sinensis*) dan kakao (*Theobroma cacao*). Skripsi, Universitas Gadjah Mada.
- Ahemad, M. and M. Kibret. 2013. Mechanism and application of plant growth promoting rhizobacteria: Current prespective. *Journal of King Saud University-Science*. 26: 1-20.
- Atlas, R. M. 2010. *Handbook of microbiological media*. 4th ed. CRC Press, Florida.
- Artiola, J. F., J. L. Walworth, S. A. Musil, and M. A. Crimmins. 2019. Soil and Land Pollution. In: Brusseau *et al.* (Ed). *Environmental and Pollution Science*. 3rd ed. Academic Press, California.
- Balitkabi. 2016. Deskripsi varietas unggul kedelai 1918-2016. <<https://balitkabi.litbang.pertanian.go.id/>>. Diakses pada 04 September 2019.
- Balittanah. 2006. Rekomendasi pemupukan tanaman kedelai pada berbagai tipe penggunaan lahan. <<https://balittanah.litbang.pertanian.go.id/>>. Diakses pada 10 November 2020.
- Burton, J. C. 1984. *Legume inoculant production manual*. NifTAL Center, Hawaii.
- Buurman, P. 1980. *Red soils in Indonesia*. Centre for Agricultural Publishing and Documentation, Wageningen.
- Campbell, N. A., J. B. Reece, dan L. G. Mitchell. 2005. *Biology (Biologi, alih bahasa Wasmen Manalu)*. Edisi ke-5. Erlangga, Jakarta.
- Chatterji, M., S. Unniraman, S. Mahadevan, and V. Nagaraja. 2001. Effect of different classes of inhibitors on DNA gyrase from *Mycobacterium smegmatis*. *Journal of Antimicrobial Chemotherapy*. 48: 479-485.
- Crossman, L. C., V. C. Gould, J. M. Dow, G. S. Vernikos, A. Okazaki. M. Sebahia, D. Saunders, C. Arrowsmith, T. Carver, N. Peters, E. Adlem, A. Kerhornou, A.

- Lord, L. Murphy, K. Seeger, R. Squares, S. Rutter, M. A. Quail, M. Rajandream, D. Harris, C. Churcher, S. D. Bentley, J. Parkhill, N. R. Thomson, and M. B. Avison. 2008. The complete genome, comparative and functional analysis of *Stenotrophomonas maltophilia* reveals an organism heavily shielded by drug resistance determinants. *Genome Biology*. 9: 74-87.
- Danish, S. and Zafar-ul-Hye, M., 2019. Co-application of ACC-deaminase producing PGPR and timber-waste biochar improves pigments formation, growth and yield of wheat under drought stress. *Scientific Reports*. 9: 1-13.
- Damardjati, D. S., Marwoto, D. K. S. Swastika, D. M. Arsyad, dan Y. Hilman. 2005. Prospek dan arah pengembangan agribisnis kedelai. Badan Litbang Pertanian. Departemen Pertanian, Jakarta.
- Darmawijaya, M. I. 1997. Klasifikasi tanah dasar dan teori bagi peneliti tanah dan pelaksana pertanian Indonesia. Gadjah Mada University Press, Yogyakarta.
- Dubois, M., L. V. den Broeck, and D. Inze. 2018. The Pivotal Role of Ethylene in Plant Growth. *Trends in Plant Science*. 23: 311-323.
- Dworkin, M. and J. Foster. 1958. Experiments with some microorganisms which utilize ethane and hydrogen. *Journal of Bacteriology*. 75: 592-601.
- Eckhardt, U., B. Grimm, and S. Hörtensteiner. 2004. Recent advances in chlorophyll biosynthesis and breakdown in higher plants". *Plant Molecular Biology*. 56: 1-14.
- Esau, K., V. I. Cheadle, and E. M. Gifford Jr. 1953. Comparative structure and possible trends of specialization of the phloem. *American Journal of Botany*. 40: 9-19.
- FAO. 2020. Management of some problem soils: Acid soils. <<http://www.fao.org/>>. Diakses 03 Desember 2020.
- Faraji, R., A. Parsa, B. Torabi, and T. Withrow. 2006. Effects of kanamycin on the macromolecular composition of kanamycin sensitive *Escherichia coli* DH5 α strain. *Journal of Experimental Microbiology and Immunology*. 9: 31-38.
- Fleck, S., S. Raspe, M. Cater, P. Schleppei, L. Ukonmaanaho, M. Greve, C. Hertel, W. Weis, and S. Rumpf. 2012. Leaf area measurements. Manual Part XVII. In: Manual on methods and criteria for harmonized sampling, assessment, monitoring, and analysis of the effects of air pollution on forests. UNECE/ICP Forest Programme Co-ordinating Centre, Hamburg.
- Foy, C. D. 1984. Physiological effects of hydrogen, aluminum, and manganese toxicities in acid soil. 2nd ed. Agronomy Monograph, Maryland.
- Fritschi, F. B. and J. D. Ray. 2007. Soybean leaf nitrogen, chlorophyll content, and chlorophyll a/b ratio. *Photosynthetica*. 45: 92-98.

- Ghoul, M. and S. Mitri. 2016. The ecology and evolution of microbial competition. *Trends in Microbiology*. 24: 833-845.
- Giehl, R. F. H., B. D. Gruber, and N. von Wirén. 2014. It's time to make changes: Modulation of root system architecture by nutrient signals. *Journal of Experimental Botany*. 65: 769-778.
- Glick, B. R. 1995. The enhancement of plant growth by free-living bacteria. *Canadian Journal of Microbiology*. 41: 109-117.
- Glick, B. R. 2012. Plant growth-promoting bacteria: Mechanisms and applications. *Scientifica*. 2012: 1-15.
- Glick, B. R. 2014. Bacteria with ACC deaminase can promote plant growth and help to feed the world. *Microbiological Research*. 169: 30-39.
- Glick, B. R. 2015. Stress control and ACC deaminase. *In*: Lugtenberg, B. (Ed.) *Principles of plant-microbe interactions*. Springer International Publishing, Cham.
- Golzarian, M. R., R. A. Frick, K. Rajendran, B. Berger, S. Boy, M. Tester, and D. S. Lun. 2011. Accurate inference of shoot biomass from high-throughput image of cereal plants. *Plant Methods*. 7: 1-11.
- Haridjaja, O., D. P. T. Baskoro, dan M. Setianingsih. 2013. Perbedaan nilai kadar air kapasitas lapang berdasarkan metode Alhricks, drainase bebas, dan *pressure plate* pada berbagai tekstur tanah dan hubungannya dengan pertumbuhan bunga matahari (*Helianthus annuus* L.). *Jurnal Ilmu Tanah dan Lingkungan*. 15: 52-59.
- Heady, H. F. 1957. The measurement and value of plant height in the study of herbaceous vegetation. *Journal of Ecology*. 38: 313-320.
- Honma, M. and T. Shimomura. 1978. Metabolism of 1-aminocyclopropane-1-carboxylic acid. *Agricultural and Biological Chemistry*. 42: 1825-1831.
- Horst, W. J., N. Schmoh, M. Kollmeier, F. Balulška, and M. Sivaguru. 1999. Does aluminium affect root growth of maize through interaction with the cell wall-plasma membrane-cytoskeleton continuum? *Plant and Soil*. 215: 163-174.
- Integrated Taxonomic Information System (ITIS). 2020. ITIS Report: *Glycine max* (L.) Merr. <<http://www.itis.gov/>>. Diakses pada 03 Desember 2020.
- Iqbal, N., N. A. Khan, A. Ferrante, A. Trivellini, A. Francini, and M. I. R. Khan. 2017. Ethylene role in plant growth, development and senescence: interaction with other phytohormones. *Frontiers in Plant Science*. 8: 2-19.
- Irwan, A. W. dan F. Y. Wicaksono. 2017. Perbandingan pengukuran luas daun kedelai dengan metode gravimetri, regresi, dan scanner. *Jurnal kultivasi*. 16: 425-429.

- Ismail, I. G. dan S. Effendi. 1985. Pertanaman kedelai pada lahan kering. *Dalam: Somaatmadja et al.* (eds) Kedelai. Puslitbangtan, Bogor.
- Jing, H. C., J. H. M. Schippers, J. Hille, and P. P. Dijkwel. 2005. Ethylene-induced leaf senescence depends on age-related changes and *OLD* genes in *Arabidopsis*. *Journal of Experimental Botany*. 56: 2915-2923.
- Jumakir dan Endrizal. 2010. Produktivitas kedelai varietas Anjasmoro melalui pendekatan PTT pada lahan sub optimal di Provinsi Jambi. Balai Pengkajian Teknologi Pertanian Jambi, Jambi.
- Jutono. 1969. Biphasic system for leguminosae-bacteria and a simple method of preparing Leguminosae inoculant. *Reserach Journal* 3: 1-5.
- Kementrian Pertanian RI. 2018. Produksi Kedelai Menurut Provinsi, 2014-2017. <<http://www.pertanian.go.id/>>. Diakses 3 Maret 2019.
- Kende, H. 1993. Ethylene biosynthesis. *Annual Review Plant Biology*. 44: 283-307.
- Khan, N., A. Bano, M. A. Rahman, J. Guo, Z. Kang, and M. A. Babar. 2019. Comparative physiological and metabolic analysis reveals a complex mechanism involved in drought tolerance in Chickpea (*Cicer arietinum* L.) induced by PGPR and PGRs. *Scientific Reports*. 9: 1-19.
- Krisdiana, R. 2014. Penyebaran varietas unggul kedelai dan dampaknya terhadap ekonomi perdesaan. *Penelitian Pertanian Tanaman Pangan*. 33: 61-69.
- Kusumowati, I. T. D., Siswandono, dan M. Rudyanto. 2011. Hubungan struktur turunan M-Klorobenzoilamoksisilin dan aktivitas antibakterinya terhadap *Pseudomonas aeruginosa* ATCC 27853. *Jurnal Farmasi Indonesia*. 5: 142-149.
- Kuswanto, H., Sutrisno, dan A. Supeno. 2017. Keragaan agronomi galur-galur kedelai potensial pada dua agroekologi lahan kering masam. *Jurnal Agronomi Indonesia*. 45: 23-29.
- Lindsay, W. L. 1979. Chemical equilibria in soils. A Wiley-Interscience Pub, Toronto.
- Marsch-Martinez, N., R. Greco, J. D. Becker, S. Dixit, J. H. B. Bergervoet, A. Karaba, S. de Folter, and A. Pereira. 2006. *BOLITA*, an *Arabidopsis* AP2/ERF-like transcription factor that affects cell expansion and proliferation/differentiation pathways. *Plant Molecular Biology*. 62: 825-843.
- Marschner, H. 1991. Mechanism of adaptation of plants to acid soils. *Plant and Soil*. 134: 1-20.
- Meirina, A. D., S. Wedhastri, dan Ngadiman. 2016. Isolasi dan identifikasi bakteri penghasil ACC deaminase dari akar tanaman bawang merah, cabe, dan kentang. Skripsi, Universitas Gadjah Mada.

- Moretti, L. G., C. A. C. Crusciol, E. E. Kuramae, J. W. Bossolani, A. Moreira, N. R. Costa, C. J. Alves, I. M. Pascoaloto, A. B. L. Rondina, and M. Hungria. 2020. Effects of growth-promoting bacteria on soybean root activity, plant development, and yield. *Journal of Agronomy*. 112: 418-428.
- Mosa, K. A., A. Ismail, and M. Helmy. 2017. Introduction to plant stresses. *SpringerBriefs in Systems Biology*. Springer International Publishing, Cham.
- Mulyani, A dan M. Sarwani. 2013. Karakteristik dan potensi lahan sub optimal untuk pengembangan pertanian di Indonesia. *Jurnal Sumberdaya Lahan*. 7: 47-55.
- Nisa, I. C., S. Rohman, dan Ngadiman. 2017. Seleksi bakteri beraktivitas ganda ACC deaminase dan nitrogenase. Tesis, Universitas Gadjah Mada.
- Patten, C. L. and B. R. Glick. 2002. Role of *Pseudomonas putida* indolacetic acid in development of the host plant root system. *Applied and Environmental Microbiology*. 68: 3795-3803.
- Prihastanti, E. 2010. Embolisme akar pohon kakao (*Theobroma cacao* L.) dan *Gliricidia sepium* pada cekaman kekeringan. Prosiding Seminar Nasional Biologi: Biologi dan Pengembangan Profesi Pendidik Biologi, Universitas Negeri Yogyakarta.
- Purwaningsih, S. 2015. Pengaruh inokulasi rhizobium terhadap pertumbuhan tanaman kedelai (*Glycine max* L) varietas wilis di rumah kaca. *Berita Biologi*. 14. 69-76.
- Ritung, S., K. Nugroho, A. Mulyani, dan E. Suryani. 2011. Petunjuk teknis evaluasi lahan untuk komoditas pertanian. Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian, Badan Penelitian dan Pengembangan, Bogor.
- Salamah, U., T. Yuwono, dan Ngadiman. 2018. Karakter ekologi dan fisiologi bakteri penghasil ACC deaminase. Skripsi, Universitas Gadjah Mada.
- Shariati, V., M. A. Malboobi, Z. Tarbizi, E. Tavakol, P. Owilia and M. Safari. 2017. Comprehensive genomic analysis of a plant growth-promoting rhizobacterium *Pantoea agglomerans* strain P5. *Scientific Report*. 7:1-12.
- Sharma, S. K., L. Singh, and S. Singh. 2013. Comparative study between penicillin and ampicillin. *Scholars Journal of Applied Medical Sciences*. 1: 291-294.
- Simarmata, R., Ngadiman, S. Rohman, and P. Simanjuntak. 2018. Amelioration of salt tolerance in soybean (*Glycine max* L.) by plant-growth promoting endophytic bacteria produce 1-aminocyclopropane-1-carboxylase deaminase. *Annales Bogorienses*. 22: 81-93.
- Shurtleff, W. and A. Aoyagi. 2010. History of soybeans and soy foods in Southeast Asia. Soyinfo Center, California.

- Smyth, T. J. and M. S. Cravo. 1992. Aluminum and calcium constraints to continuous crop production in a Brazilian amazon oxisol. *Agronomy Journal*. 84: 843-850.
- Soeprattohardjo, M. 1961. Klasifikasi tanah kategori tinggi di Balai Penyelidikan Tanah. Kongres Nasional Ilmu Tanah I, Bogor.
- Subardja, D., S. Ritung, M. Anda, Sukarman, E. Suryani, dan R. E. Subandiono. 2016. Petunjuk teknis klasifikasi tanah nasional. Edisi ke-2. Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian, Badan Penelitian dan Pengembangan Pertanian, Bogor.
- Suprpto, H. 1998. Bertanam Kedelai. Penebar Swadaya, Jakarta.
- Taufiq, A. dan T. Sundari. 2012. Respon tanaman kedelai terhadap lingkungan tumbuh. *Buletin Palawija*. 23: 13-26.
- Taylor, G. J. 1988. The physiology of aluminum tolerance. In *Metal Ions in Biological Systems*. Eds. H Sigel and A Sigel. Marcel Dekker Inc., New York.
- Widaningsih, R., M. Chafid, D. Riniarsih, T. Heni, E. Respati, H. P. Muliany, R. Suryani, V. Y. Siagian, dan T. Agustina. 2017. Outlook tanaman pangan dan hortikultura. Pusat Data dan Sistem Informasi Pertanian, Jakarta.
- Wijanarko, A. dan A. Taufiq. 2004. Pengelolaan kesuburan lahan kering masam untuk tanaman kedelai. *Buletin Palawija*. 7: 39-50.
- Wijanarko, A. and A. Taufiq. 2016. Effect of lime application on soil properties and soybean yield on tidal land. *Agrivita*. 3: 14-23.
- Wu, C., S. H. Yu, S. Chen, G. Liu, and B. Liu. 2006. Large scale synthesis of uniform CuS nanotubes in ethylene glycol by a sacrificial templating method under mild conditions. *Journal of Materials Chemistry*. 16: 3326-3331.
- Xu, J. and S. Zhang. 2015. Ethylene biosynthesis and regulation in plants. In: Wen, Chi-Kuang (Ed.). *Ethylene in Plants*. Springer, Dordrecht.
- Yang, J. L., S. J. Zheng, Y. F. He, H. Matsumoto. 2005. Aluminium resistance requires resistance to acid stress: a case study with spinach that exudes oxalate rapidly when exposed to Al stress. *Journal of Experimental Botany*. 56: 1197-1203.
- Yang, S. F., and N. E. Hoffman. 1984. Ethylene biosynthesis and its regulation in higher plants. *Annual Review Plant Physiology*. 35: 155-189.
- Zahir, Z. A., U. Ghani, M. Naveed, S. M. Nadeem, and H. N. Asghar. 2009. Comparative effectiveness of *Pseudomonas* and *Serratia* sp. containing ACC-deaminase for improving growth and yield of wheat (*Triticum aestivum* L.) under salt-stressed conditions. *Archives of Microbiology*. 191: 415-424.

Zhao, Y. 2010. Auxin biosynthesis and its role in plant development. Annual Review of Plant Biology. 61: 49-64.