

DAFTAR PUSTAKA

- Abdul-Nabi, S.S., Al Karaki, V., Khalil, A., & El Zahran, T. 2025. Climate change and its environmental and health effects from 2015 to 2022: A scoping review. *Heliyon*, 11: e42315.
- Abreu EFM, Lopes AC, Fernandes AM, Silva SXB, Barbosa CJ, Nascimento AS, Laranjeira FF, and Andrade EC. 2020. First report of HLB causal agent in psyllid in State of Bahia, Brazil. *Neotropical Entomology* 49(5):780–782.
- Asad, S., He, P., He, P., Li, y., Wu, Y., Ahmed, A., Wang, Y., Munir, S., & He, Y. 2021. Interactions between indigenous endophyte *Bacillus subtilis* L1-21 and nutrients inside citrus in reducing huanglongbing pathogen *Candidatus Liberibacter asiaticus*. *Pathogens*. 10(10): 1304.
- Asri, A.C & Zulaika, E. 2016. Sinergisme antar isolat *Azotobacter* yang dikonsorsiumkan. *Jurnal Sains dan Seni ITS*. 5(2): 2337-3520.
- Badan Pusat Statistik (BPS). 2023. Statistik Hortikultura Indonesia. BPS Indonesia, Jakarta.
- Bernal, M.A.E., Navarro, M.P.M., Gomez, J.L.A., Saldana, C., Lopez, M.A.R., Reyes, A.A., Garcia, M.E., Aguilar, J.R.P., Moreno, V.P., Morales, J.A.R., Hidalgo, E.A., Ramirez, J.N., Flores, J.L.H., & Guillen, J.C. 2024. Biocontrol Activity of *Bacillus altitudinis* CH05 and *Bacillus tropicus* CH13 isolated from *Capsicum annum* L. seeds against fungal strains. *Microorganism*. 12(10): 1943.
- Bonani J.P., Fereres A., Garzo E., Miranda M.P., Appezzato-Da- -Gloria B., Lopes J.R.S. 2009. Characterization of electrical penetration graphs of the Asian citrus psyllid, *Diaphorina citri*, in sweet orange seedlings. *Entomologia Experimentalis et Applicata* 134 (1): 35–49.
- Cardarelli, M., Woo, S. L., Roupheal, Y., & Colla, G. 2022. Seed treatments with microorganisms can have a biostimulant effect by influencing germination and seedling growth of crops. *In Plants*. 11(3): 259.
- Chen, K., Z, Tian., H. He., C, Long., & F. Jiang. 2020. *Bacillus* species as potential biocontrol agents against citrus diseases. *Biological Control*. 151: 104419.
- Chen, Y., Yang. C., Holford, P., Beattie, G.A.C., Spooner-Hart, R.N., Liang, G., & Deng, X. 2012. Feeding behaviour of the Asiatic citrus psyllid, *Diaphorina citri*, on healthy and huanglongbing-infected citrus. *Entomologia Experimentalis et Applicata*. 143: 13–22.
- Chowdhury, S. P., Hartmann, A., Gao, X., & Borriss, R. (2015). Biocontrol mechanism by root-associated *Bacillus amyloliquefaciens* FZB42 – a review. *Frontiers in Microbiology*. 6: 780.
- Cichoka E., Goszczyński W., Lubiarski M. 2015. Chemical and physiology changes caused by aphids feeding on their host plants. *Journal of Entomology* 84: 233–248.
- Dala-Paula B, Gloria M, Plotto A, Bai J, Manthey J, Baldwin E, Ferrarezi R. 2019. Effect of huanglongbing or greening disease on orange juice quality, a review. *Frontiers Plant Science*. 9:1–19.

- De Sousa, S.M., de Oliveira, C.A., Andrade, D.L., de Carvalho, C.G., Ribeiro, V.P., Patina, M.M., Marriel, I.E., de Paula Lana, U.G., & Gomes, E.A. 2021. Tropical *Bacillus* strains inoculation enhances maize root surface area, dry weight, nutrient uptake and grain yield. *Journal of Plant Growth Regulation*. 40: 867-877.
- Deng, Y & Wang, S.Y. 2016. Synergistic growth in bacteria depends on substrate complexity. *Journal of Microbiology*. 1: 23-30.
- Dolatabadian, A., & Fernando, W. G. D. 2022. Genomic variations and mutational events associated with plant-pathogen interactions. *Biology*. 11(3): 421.
- Dordas, C. 2009. Role of nutrients in controlling plant diseases in sustainable agriculture: a review. In *Sustainable agriculture*. pp.443 -460: Springer.
- Duin, I.M., Rodrigues, V.H.S., Leite, R.P., Jr., & Balbi-Peña, M.I. 2024. Activity Against *Xanthomonas vasicola* pv. *vasculorum*, control of bacterial leaf streak of corn and genome insights into its antagonistic activity. *Agronomy*. 14: 2495.
- Dwiastuti ME, Wuryantini S, Sugiyatno A, Supriyanto A. 2019. Seed health evaluation in the process of free-virus citrus seed production on Kampar Regency, Riau Province of Indonesia. *Russian Journal of Agricultural and Socio-Economic Sciences*. 86:273–282.
- Es-sahm, I., Esseri, S., Dich, J., Smaili, A., Rifai, L.A., Fize, L., Koussa, T., Venisse, J.S., Benyahia, Y., Sawadi, N., Rabib, H., Badri, W., & Faize, M. 2024. Common *Bacillus* mitigate tomato verticillium wilt and bacterial specks when combined with an essential oil extract. *Rhizosphere*. 29: 100865.
- Fira, D., L. Dimkic, T. Beric T., J. Lozo J., S. Stankovic. 2018. Biological control of plant pathogens by *Bacillus* species. *J. Biotechnol*. 285: 44-55.
- Folimonova, S.Y & Achor, D.S. 2010. Early events of citrus greening (huanglongbing) disease development at the ultrastructural level. *Phytopathology* 100: 949–958.
- Fujikawa.T & Iwanami.T. 2012. Sensitive and robust detection of citrus greening (huanglongbing) bacterium “*Candidatus Liberibacter asiaticus*” by DNA amplification with new 16S rDNA-specific primers. *Molecular and Cellular Probes*. 26(5):194–197.
- Fujiwara, K., Iwanami, T., & Fujikawa, T. 2018. Alterations of *Candidatus Liberibacter asiaticus*-associated microbiota decrease survival of *Ca. L. asiaticus* in in vitro assays. *Frontiers in microbiology*. 9: 3089.
- George, J., Kanissery, R., Ammar, E., Cabral, I., Markle, L.T., Patt, J.M., & Stelinski, L.L. 2020. Feeding behavior of asian citrus psyllid [*Diaphorina citri* (Hemiptera: Liviidae)] nymphs and adults on common weeds occurring in cultivated citrus described using electrical penetration graph recordings. *Insects*. 11(1): 48.
- Giassi, V., Kiritani, C., & Kupper, K. C. (2016). Bacteria as growth-promoting agents for citrus rootstocks. *Microbiological Research*. 190: 46–54.
- Hu, H., Liu, H., Zhang, H., Zhu, J., Yao, X., Zhang, X., & Zheng, K. 2010. Assessment of Chlorophyll Content Based on Image Color Analysis, Comparison with

SPAD-502. International Conference on Information Engineering and Computer Science. 1–3.

- Hossain, M. T., & Chung, Y. R. 2019. Endophytic *Bacillus* Species Induce Systemic Resistance to Plant Diseases (pp. 151–160). Springer, Cham.
- Ijaz, A., Mumtaz, M.Z., Wang, X., Ahmad, M., Saqib, M., Maqbool, H., Zaheer, A., Wang, W., & Mustafa, A. 2021. Insights into manganese solubilizing *Bacillus* sp. for improving plant growth and manganese uptake in maize. *Frontiers in Plant Science*. 12: 719504.
- Jaoude, R.A., Luziatelli, F., Ficca, A.G., & Ruzzi, M. 2025. Effect of plant growth-promoting rhizobacteria synthetic consortium on growth, yield, and metabolic profile of lettuce (*Lactuca sativa* L.) grown under suboptimal nutrient regime. *Horticulture*. 11(1): 64.
- Juvany, M., Muller, M., & Munne-Bosch, S. 2013. Plant age-related changes in cytokinins, leaf growth and pigment accumulation in juvenile mastic trees. *Environmental and Experimental Botany*. 87: 10-18.
- Kamada, N., Chen, G. Y., Inohara, N., & Núñez, G. 2013. Control of pathogens and pathobionts by the gut microbiota. *Nat. Immunol*. 14:685.
- Kashyap, B. K., Solanki, M. K., Pandey, A. K., Prabha, S., Kumar, P., & Kumari, B. 2019. *Bacillus* as Plant Growth Promoting Rhizobacteria (PGPR): A Promising Green Agriculture Technology (pp. 219–236). Springer, Singapore.
- Killiny, N., and Nehela, Y. (2017b). One target, two mechanisms: the impact of '*Candidatus Liberibacter asiaticus*' and its vector, *Diaphorina citri*, on Citrus leaf pigments. *Mol. Plant Microbe Interact*. 30, 543–556.
- Kloepper, J. W., Ryu, C. M., & Zhang, S. (2004). Induced systemic resistance and promotion of plant growth by *Bacillus* spp. *Phytopathology*. 94: 1259–1266.
- Kokanee, S.B., Bhose, S., Kokane, A., Gubyad, M., & Ghosh, D.K. 2020. Molecular detection, identification, and sequence analysis of '*Candidatus Liberibacter asiaticus*' associated with Huanglongbing disease of citrus in North India. *Biotech*. 10(8): 341.
- Labidah, M., Mhamdi, B., Loulou, A., & Sadreddine, K. 2023. Impact of rhizobacteria community of citrus root on *Tylenchulus semipenetrans* and on citrus plant growth. *Biocontrol Science and Technology*. 33(3): 241-257.
- Lei, H., van Lenteren, J. C., & Tjallingii, W. F. 1999. Analysis of resistance in tomato and sweet pepper against the greenhouse whitefly using electrically monitored and visually observed probing and feeding behavior. *Entomologia Experimentalis et Applicata*. 92: 299–309.
- Lichtenthaler, H.K & Buschmann, C., 1978. In: Chloroplast Development. G. Akoyunoglou, Elsevier, Amsterdam, 801-816.
- Liu, Y., Du, J., Lai, Q., Zeng, R., Ye, D., Xu, J., & Shao, Z. 2017. Proposal of nine novel species of the *Bacillus cereus* group. *International Journal of Systematic and Evolutionary Microbiology*. 67(8): 2499–2508.
- Liya, S.M & Umesh, M. 2023. Bioconversion of chicken feather waste into feather hydrolysate by multifaceted keratinolytic *Bacillus tropicus* LS27 and new

insights into its antioxidant and plant growth-promoting properties. Biomass conversion and biorefinery. 1-11.

- Lubis, R.T., Rahmanta., & T. Supriana. 2021. Analisis faktor-faktor yang mempengaruhi pendapatan usaha tani jeruk siam (studi pada petani jeruk siam di Kecamatan Besitang, Kabupaten Langkat, Sumatera Utara). Journal of Economics and Business Innovation. 1(2): 129-140.
- Martinelli, F., Uratsu, S., Albrecht, U., Reagan, R., Phu, M., Britton, M., Buffalo, V., Fass, J., Leicht, E., & Zhao, W.D. 2012. Transcriptome profiling of citrus fruit response to huanglongbing disease. PLoS ONE. 7: e38039.
- Mehrabi, S.S., Sabokdast, M., Bihamta, M.R., & Dedicova, B. 2024. The coupling effects of pgpr inoculation and foliar spraying of strigolactone in mitigating the negative effect of salt stress in wheat plants: insights from phytochemical, growth, and yield attributes. Agriculture. 14(5): 732.
- Meng, Q., Jiang, H., & Hao, J. J. 2016. Effects of *Bacillus velezensis* strain BAC03 in promoting plant growth. Biological Control. 98: 18–26.
- Miran, W., Nawaz, M., Jang, J., & Lee, D.S., 2016. Sustainable electricity generation by biodegradation of low-cost lemon peel biomass in a dual chamber microbial fuel cell. Int. Biodeterior. Biodegrad. 106, 75–79.
- Mohd Azim Khan, N. A., Jaya Jothi, S., Mohd Hata, E., Parimannan, S., Vadamalai, G., & Rajandas, H. (2022). Draft Genome Sequence of *Bacillus tropicus* strain UPM-CREST01, isolated from the bulk paddy soil at Kampung Gajah, Perak. Microbiology Resource Announcements. 11(2): e01156-21.
- Molinari, S., & Leonetti, P. 2019. Bio-control agents activate plant immune response and prime susceptible tomato against root-knot nematodes. PLoS ONE. 14(12): 1–17.
- Mumtaz, M.Z., Barry, K.M., Baker, A.L., Nichols, D.S., Ahmad, M., Zahir, Z.A., & Britz, M.L. 2019. Production of lactic and acetic acids by *Bacillus* sp. ZM20 and *Bacillus cereus* following exposure to zinc oxide: A possible mechanism for Zn solubilization. Rhizosphere. 12: 100170.
- Munir, S., Li, Y., He, P., He, P., He, P., Cui, W., Wu, Y., Li, X., Li, Q., Zhang, S. and Xiong, Y., 2022. Defeating Huanglongbing pathogen *Candidatus Liberibacter asiaticus* with indigenous citrus endophyte *Bacillus subtilis* L1-21. Frontiers in Plant Science. 12:789065.
- Nan, J., S, Zhang., & L, Jiang. 2021. Antibacterial potential of *Bacillus amyloliquefaciens* GJ1 against citrus huanglongbing. Plants. 10: 261-275.
- Noor, A.O., Almasari, D.M., Basyony, A.F., Albohy, A., Almutairi, L.S., Alhammadi, S.S., Alkamisi, M.A., Alsharif, S.A., & Elfaky, M.A. 2022. Biodiversity of N-acyl homoserine lactonase (aiiA) gene from *Bacillus subtilis*. Microbial Pathogenesis. 166: 105543.
- Petkova, M., Marcheva, M., Petrova, A., Slavova, V., & Shilev, S. 2025. Plant growth-promoting and biocontrol characteristics of four *Bacillus* strains and evaluation of their effects on wheat (*Tr. aestivum* L.). International Journal of Plant Biology. 16: 1.

- Popoviciu, D.R & Bercu, R. 2016. Morphometric and anatomical comparative features of *Citrus limon* (L.) Burm., *Citrus maxima* (Burm.) Merr. and *Citrus × paradisi* Macfad. Fruits. Analele Universităţii din Craiova seria Filosofie. 46(2):234-242.
- Sariasih, Y., S. Subandiyah., S. Widyaningsih., T. Khurshid., J. Mo., & N. Donovan. 2024. Comparison of two huanglongbing detection methods in samples with different symptom severity. Jurnal Fitopatologi Indonesia. 20(4): 174-186.
- Sarker, M.N.I., Barman, S.C., Islam, M.M., Islam, M.R., & Chakman, A.S. 2017. Role of lemon (*Citrus limon*) production on livelihoods of rural people in Bangladesh. Journal of Agricultural Economics and Rural Development. 2(2): 53-63.
- Selvaraj, V., Maheswari, Y., Hajeri, S., Chen, J., McCollum, T.G., & Yokomi, R. 2018. Development of a duplex droplet digital PCR assay for absolute quantitative detection of "*Candidatus Liberibacter asiaticus*". PLoS One. 13(5): e0197184.
- Shibghatallah, M. A. H., Khotimah, S., Suhandono, S., Viridi, S., & Kesuma, T. 2013. Measuring leaf chlorophyll concentration from its color: A way in monitoring environment change to plantations. In *AIP conference proceedings* (Vol. 1554, No. 1, pp. 210-213). American Institute of Physics.
- Shyam, D & Narzary, D. 2024. Evaluation of plant growth-promoting rhizobacteria on chilli (*Capsicum annuum* L.) and brinjal (*Solanum melongena* L.) growth. Academia Journal of Biology. 46(4): 145-158.
- Sondang, Y., Muflihayati., Anty, K., & Siregar, R. 2023. Kompatibilitas beberapa strain *Bacillus* sebagai bioaktivator pupuk organik hayati. Jurnal Agroteknologi. 13(2): 53-60.
- Spiller, N.J., Koenders, L., & Tjallingii, W. F. (1990). Xilem ingestion by aphids a strategy for maintaining water balance. *Entomologia Experimentalis et Applicata*, 55, 101–104.
- Stephenson FH. Chapter 9: real-time PCR. In: FH Stephenson, editor. *Calculations for molecular biology and biotechnology*. 3rd ed. US: Academic Press; 2016. p. 215–320.
- Tiwari, S., Prasad, V., Chauhan, P. S., & Lata, C. 2017. *Bacillus amyloliquefaciens* confers tolerance to various abiotic stresses and modulates plant response to phytohormones through osmoprotection and gene expression regulation in rice. *Frontiers in Plant Science*. 8: 1510.
- Tjallingii W.F. 1978. Electronic recording of penetration behavior by aphids. *Entomologia Experimentalis et Applicata*. 24 (3): 721–730.
- Trivedi, P., Sagaram, U.S., Kim, J.S., Brlansky, R.H., Rogers, M.E., Stelinski, L.L., Oswald, C., & Wang, N. 2009. Quantification of viable *Candidatus Liberibacter asiaticus* in hosts using quantitative PCR with the aid of ethidium monoazide (EMA). *European Journal Of Plant Pathology*. 124: 553-563.
- Waewthongrak, W., Pisuchpen, S., Leelasuphakul, W., 2015. Effect of *Bacillus subtilis* and chitosan applications on green mold (*Penicillium digitatum* Sacc.) decay in citrus fruit. *Postharvest Biol. Technol.* 99, 44–49.

- Wu, F., Cen, Y., Deng, X., Chen, J., Xia, Y., & Liang, G. 2015. Movement of *Diaphorina citri* (Hemiptera: Liviidae) adults between huanglongbing-infected and healthy citrus. *Florida Entomologist*. 98(2): 410-416.
- Wu, X., Meng, C., Wang, G., Liu, Y., Zhang, X., Yi, K., & Peng, J. 2016. Rapid and quantitative detection of citrus huanglongbing bacterium '*Candidatus Liberibacter asiaticus*' by real-time fluorescent loop mediated isothermal amplification assay in China. *Physiological and Molecular Plant Pathology*. 94: 1-7.
- Zaher-Ara, T., Boroomand, N., & Sadat-Hosseini, M. 2016. Physiological and morphological response to drought stress in seedlings of ten citrus. *Trees*. 30: 985-993.
- Zhang, Y., Chen, Y., Ma, J., Zhao, D., Wang, Y., Yan, L., Wu, L., & He, Y. 2024. Controlling citrus Huanglongbing based on soil remediation and biocontrol. *European Journal of Plant Pathology*. 169: 379-393.
- Zhao, L., Xu, Y., and Lai, X. 2018. Antagonistic endophytic bacteria associated with nodules of soybean (*Glycine max* L.) and plant growth-promoting properties. *Braz. J. Microbiol.* 49, 269–278.
- Zhong, Z.F., Zhou, X.J., Lin, J.B., Liu, X.J., Shao, J., Zhong, L.B., Peng, T. 2019. Effects of leaf colorness, pigment contents and allelochemicals on the orientation of the Asian citrus psyllid among four Rutaceae host plants. *BMC Plant Biol.* 19(254): 1-21.