

REFERENCES

- Abobatta WF. 2019. Arbuscular Mycorrhizal and Citrus Growth : Overview. 2(6):14–17. doi:10.31080/ASMI.2019.02.0226.
- Abreu EFM, Lopes AC, Fernandes AM, Silva SXB, Barbosa CJ, Nascimento AS, Laranjeira FF, Andrade EC. 2020. First Report of HLB Causal Agent in Psyllid in State of Bahia, Brazil. Neotrop Entomol. 49(5):780–782. doi:10.1007/s13744-020-00783-w.
- Agustina M, Jayanti D, Sugiyatno A, Roviq M, Maghfoer D. 2015. Kompatibilitas tujuh varietas calon interstock tanaman jeruk pada batang bawah Japansche Citroen (JC) compatibility of seven varieties of pre-citrus plant interstock on the rootstock of Japansche Citroen (JC). J Produksi Tanam. 10(10):1–9.
- Ahamed GJ, Hajiboland R (ed). 2021. Arbuscular Mycorrhizal Fungi and Higher Plant. Springe Singapore.
- Ajene IJ, Khamis FM, van Asch B, Pietersen G, Seid N, Rwomushana I, Ombura FLO, Momanyi G, Finyange P, Rasowo BA, et al. 2020. Distribution of *Candidatus Liberibacter* species in Eastern Africa, and the First Report of *Candidatus Liberibacter asiaticus* in Kenya. Sci Rep. 10(1):1–10. doi:10.1038/s41598-020-60712-0.
- Albrecht U, Zekri M, Williamson J. 2017. Citrus Propagation 1. IFAS Ext.:1–6.
- Alimi AA, Adeleke R, Moteetee A. 2021. Soil environmental factors shape the rhizosphere arbuscular mycorrhizal fungal communities in South African indigenous legumes (Fabaceae). Biodiversitas. 22(5):2466–2476. doi:10.13057/biodiv/d220503.
- Alizadeh O. 2011. Mycorrhizal Symbiosis. Mycorrhizal Symbiosis. 3(January 2011):273–281. doi:10.1016/B978-0-12-370526-6.X5001-6.
- Ambarwati E. 2023. KEEFEKTIFAN JAMUR MIKORIZA DALAM MENINGKATKAN KETAHANAN CABAI RAWIT (*Capsicum frutescens* L .) TERHADAP PENYAKIT LAYU BAKTERI. Disertasi Univ Gadjah Mada.
- Ambarwati E, Arwiyanto T, Widada J, Alam T, Andika IP, Taryono. 2022. The Genes Associated with Jasmonic Acid and Salicylic Acid Are Induced in Tropical Chili Pepper against *Ralstonia solanacearum* by Applying Arbuscular Mycorrhizal Fungi. Horticulturae. 8(10). doi:10.3390/horticulturae8100876.
- Ammar ED, Achor D, Levy A. 2019. Immuno-ultrastructural localization and putative multiplication sites of huanglongbing bacterium in asian citrus psyllid *Diaphorina citri*. Insects. 10(12). doi:10.3390/insects10120422.
- Anonym. 2021. Food and Agriculture Organization of the United Nations (FAO). (2017). Citrus: world markets and trade. :1–13. <https://apps.fas.usda.gov/psdonline/circulars/Citrus.pdf>.
- Anonym. 2022. Produksi Tanaman Buah-Buahan. Jakarta.:335–58. <https://www.bps.go.id/linkTableDinamis/view/id/960>.
- Antoniolli Z., Facelli E, O'Connor P, Miller D, Ophel-Keller K, Smith S. 2002. Spore Communities of Arbuscular Mycorrhizal Fungi and Mycorrhizal Associations in Different Ecosystems, South Australia Resumo: Comunidades De Esporos De Fungos Micorrízicos Arbusculares E Associação Micorrízica Em Diferentes Ecosystemas No Sul Da Austrá. Ci Solo. 26(1):627–635.
- Arnon D. 1949. Plant physiology. Encycl Ecol. 24(1):549–557. doi:10.1016/B978-0-12-409548-9.11130-3.
- Arofattullah NA, Kabirun S, Fujiyama K, Widiyanto D. 2019. Molecular identification and in vitro propagation of arbuscular mycorrhiza from tea plant rhizosphere. Curr Res Environ Appl Mycol. 9(1):92–102. doi:10.5943/cream/9/1/10.

- de Azevedo JL, Quecine MC. 2017. Diversity and benefits of microorganisms from the tropics. *Divers Benefits Microorg from Trop.*(June):1–439. doi:10.1007/978-3-319-55804-2.
- Back MM, Altmann T, Souza PVD de. 2016. Influence of arbuscular mycorrhizal fungi on the vegetative development of citrus rootstocks1. *Pesqui Agropecuária Trop.* 46(4):407–412. doi:10.1590/1983-40632016v46a42180.
- Barbosa JC, Eckstein B, Inoue-Nagata AK, Filho AB, Bedendo IP. 2022. Molecular delineation of a phytoplasma representative of the novel 16SrVII-G subgroup found in citrus trees with huanglongbing symptoms. *J Plant Dis Prot.* 129(2):419–424. doi:10.1007/s41348-021-00532-0. <https://doi.org/10.1007/s41348-021-00532-0>.
- Barus RS, Nion YA, Widyaningsih S. 2021. The effect of using uncertified citrus seeds on huanglongbing disease incidence in Karo District. *IOP Conf Ser Earth Environ Sci.* 892(1). doi:10.1088/1755-1315/892/1/012059.
- Bassanezi RB, Lopes SA, de Miranda MP, Wulff NA, Volpe HXL, Ayres AJ. 2020. Overview of citrus huanglongbing spread and management strategies in Brazil. *Trop Plant Pathol.* 45(3):251–264. doi:10.1007/s40858-020-00343-y.
- Beck A, Haug I, Oberwinkler F, Kottke I. 2007. Structural characterization and molecular identification of arbuscular mycorrhiza morphotypes of *Alzatea verticillata* (Alzateaceae), a prominent tree in the tropical mountain rain forest of South Ecuador. *Mycorrhiza.* 17(7):607–625. doi:10.1007/s00572-007-0139-0.
- Bettini BA, Cavichioli TM, Cristofani-Yaly M, Azevedo FA, Martins ALM, Schinor EH. 2019. Performance and reaction to huanglongbing of “Tahiti” acid lime grafted on citrandarins. *Acta Hortic.* 1230(January):99–105. doi:10.17660/ActaHortic.2019.1230.13.
- Bever JD. 2002. Host-specificity of AM fungal population growth rates can generate feedback on plant growth. *Plant Soil.* 244(1–2):281–290. doi:10.1023/A:1020221609080.
- Blaustein RA, Lorca GL, Teplitski M. 2018. Challenges for managing candidatus liberibacter spp. (Huanglongbing Disease Pathogen): Current control measures and future directions. *Phytopathology.* 108(4):424–435. doi:10.1094/PHYTQ-07-17-0260-RVW.
- Bona E, Todeschini V, Cantamessa S, Cesaro P, Copetta A, Lingua G, Gamalero E, Berta G, Massa N. 2018. Combined bacterial and mycorrhizal inocula improve tomato quality at reduced fertilization. *Sci Hortic (Amsterdam).* 234(January):160–165. doi:10.1016/j.scienta.2018.02.026. <https://doi.org/10.1016/j.scienta.2018.02.026>.
- Bove J. 2006. Huanglongbing: a destructive, newly-emerging, century old disease of citrus. *J Plant Pathol.* 88(1):7–37.
- Bowles TM, Barrios-Masias FH, Carlisle EA, Cavagnaro TR, Jackson LE. 2016. Effects of arbuscular mycorrhizae on tomato yield, nutrient uptake, water relations, and soil carbon dynamics under deficit irrigation in field conditions. *Sci Total Environ.* 566–567:1223–1234. doi:10.1016/j.scitotenv.2016.05.178. <http://dx.doi.org/10.1016/j.scitotenv.2016.05.178>.
- Bowman KD, Albrecht U. 2020. Rootstock Influences on Health and Growth Following Candidatus *Liberibacter asiaticus* Infection in Young Sweet Orange Trees. *Agronomy.* 10(12):1907. doi:10.3390/agronomy10121907.
- Bowman KD, Joubert J. 2020. Citrus rootstocks. *The Genus Citrus.*:105–127. doi:10.1016/B978-0-12-812163-4.00006-1.
- Bowman KD, McCollum G, Albrecht U. 2016. Performance of “Valencia” orange (*Citrus sinensis* [L.] Osbeck) on 17 rootstocks in a trial severely affected by huanglongbing. *Sci Hortic (Amsterdam).* 201(June 2008):355–361. doi:10.1016/j.scienta.2016.01.019. <http://dx.doi.org/10.1016/j.scienta.2016.01.019>.

- Budiarto R, Pratita DG. 2022. Citrus Export Performances of Southeast Asian Countries: A Comparative Analysis. *J Teknotan*. 16(1):7. doi:10.24198/jt.vol16n1.2.
- Cao MA, Wang P, Hashem A, Wirth S, Abd-Allah EF, Wu QS. 2021. Field inoculation of arbuscular mycorrhizal fungi improves fruit quality and root physiological activity of citrus. *Agric*. 11(12):3–11. doi:10.3390/agriculture11121297.
- Crossay T, Majorel C, Redecker D, Gensous S, Medevielle V, Durrieu G, Cavaloc Y, Amir H. 2019. Is a mixture of arbuscular mycorrhizal fungi better for plant growth than single-species inoculants? *Mycorrhiza*.:325–339. doi:10.1007/s00572-019-00898-y.
- 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. *Front Plant Sci*. 9. doi:10.3389/fpls.2018.01976.
- Damiri N, Sriwijaya U. 2017. Effects of inoculation time of mycorrhiza vesicular arbuscular on fusarium oxysporum infection and tomatoes. (January 2010).
- Daniel R. 2005. The metagenomics of soil. *Nat Rev Microbiol*. 3(6):470–478. doi:10.1038/nrmicro1160.
- Demir S. 2004. Influence of Arbuscular Mycorrhiza on Some Physiological Growth Parameters of Pepper. *Turkish J Biol*. 28(2–4):85–90.
- Demir S, Şensoy S, Ocak E, Tüfenkçi Ş, Demirel Durak E, Erdiñç Ç, Ünsal H. 2015. Effects of arbuscular mycorrhizal fungus, humic acid, and whey on wilt disease caused by verticillium dahliae kleb. In three solanaceous crops. *Turkish J Agric For*. 39(2):300–309. doi:10.3906/tar-1403-39.
- Deng H, Achor D, Exteberria E, Yu Q, Du D, Stanton D, Liang G, Gmitter FG. 2019. Phloem regeneration is a mechanism for huanglongbing-tolerance of “bearss” lemon and “LB8-9” sugar belleopenspisupspi@closespisupspi mandarin. *Front Plant Sci*. 10(March). doi:10.3389/fpls.2019.00277.
- Dorji K, Yapwattanaphun C. 2011. Morphological identification of mandarin (*Citrus reticulata* Blanco) in Bhutan. *Kasetsart J - Nat Sci*. 45(5):793–802.
- 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. *Russ J Agric Socio-Economic Sci*. 86(2):273–282. doi:10.18551/rjoas.2019-02.34.
- Escudero V, Mendoza R. 2005. Seasonal variation of arbuscular mycorrhizal fungi in temperate grasslands along a wide hydrologic gradient. *Mycorrhiza*. 15(4):291–299. doi:10.1007/s00572-004-0332-3.
- 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. *Mol Cell Probes*. 26(5):194–197. doi:10.1016/j.mcp.2012.06.001. <http://dx.doi.org/10.1016/j.mcp.2012.06.001>.
- Fujiwara K, Iwanami T, Fujikawa T. 2018. Alterations of candidatus liberibacter asiaticus-associated microbiota decrease survival of Ca. L. asiaticus in in vitro assays. *Front Microbiol*. 9(December):1–12. doi:10.3389/fmicb.2018.03089.
- Gerdemann JW, Nicolson TH. 1963. Spores of mycorrhizal Endogone species extracted from soil by wet sieving and decanting. *Trans Br Mycol Soc*. 46(2):235–244. doi:10.1016/s0007-1536(63)80079-0. [http://dx.doi.org/10.1016/S0007-1536\(63\)80079-0](http://dx.doi.org/10.1016/S0007-1536(63)80079-0).
- Ghosh DK, Motghare M, Gowda S. 2018. Citrus greening : overview of the most severe disease of citrus. *Adv Agric Res Technol J*. 2(1):83–100. http://isasat.org/Vol-ii,issue-i/AARJ_2_1_13_Ghosh.pdf.

- Gopal K, Gopi V, Kalyani L, Sreelatha M, Sreenivasulu B. 2010. Symptom-based diagnosis of huanglongbing (citrus greening) disease by pcr in sweet orange (*Citrus sinensis* Osbeck) and acid lime (*Citrus aurantifolia* Swingle). *Arch Phytopathol Plant Prot.* 43(9):863–870. doi:10.1080/03235400802021116.
- Graham J, Gottwald T, Setamou M. 2020. Status of Huanglongbing (HLB) outbreaks in Florida, California and Texas Status of HLB in Florida. *Trop Plant Pathol.* 45:265–278. doi:10.1007/s40858-020-00335-y/Published. <https://doi.org/10.1007/s40858-020-00335-y>.
- Ha PT, He R, Killiny N, Brown JK, Omsland A, Gang DR, Beyenal H. 2019. Host-free biofilm culture of “*Candidatus Liberibacter asiaticus*,” the bacterium associated with Huanglongbing. *Biofilm.* 1:100005. doi:10.1016/j.biofilm.2019.100005.
- Habibullah M, Sumardiyono C, Widiastuti A. 2020. Potency of Non-Fungicide Chemicals for Maize Inducing Resistance against Downy Mildew. *J Perlindungan Tanam Indones.* 24(2):154. doi:10.22146/jpti.55057.
- Hanif Z. 2021. Effectiveness of the national love fruits campaign program on Indonesia consumption fruits. *IOP Conf Ser Earth Environ Sci.* 803(1):0–6. doi:10.1088/1755-1315/803/1/012053.
- Hartmann A, Schmid M, van Tuinen D, Berg G. 2009. Plant-driven selection of microbes. *Plant Soil.* 321(1–2):235–257. doi:10.1007/s11104-008-9814-y.
- Van Der Heijden MGA, Klironomos JN, Ursic M, Moutoglis P, Streitwolf-Engel R, Boller T, Wiemken A, Sanders IR. 1998. Mycorrhizal fungal diversity determines plant biodiversity, ecosystem variability and productivity. *Nature.* 396(6706):69–72. doi:10.1038/23932.
- Hodge A, Berta G, Doussan C, Merchan F, Crespi M. 2009. Plant root growth, architecture and function.
- Inoue H, Yamashita-Muraki S, Fujiwara K, Honda K, Ono H, Nonaka T, Kato Y, Matsuyama T, Sugano S, Suzuki M, et al. 2020. Fe²⁺ ions alleviate the symptom of citrus greening disease. *Int J Mol Sci.* 21(11):1–13. doi:10.3390/ijms21114033.
- Ishaq L, Adu Tae ASJ, Airthur MA, Bako PO. 2021. Effect of single and mixed inoculation of arbuscular mycorrhizal fungi and phosphorus fertilizer application on corn growth in calcareous soil. *Biodiversitas.* 22(4):1920–1926. doi:10.13057/biodiv/d220439.
- Jacott CN, Murray JD, Ridout CJ. 2017. Trade-offs in arbuscular mycorrhizal symbiosis: Disease resistance, growth responses and perspectives for crop breeding. *Agronomy.* 7(4):1–18. doi:10.3390/agronomy7040075.
- Khallal SME-. 2007. Induction and Modulation of Resistance in Tomato Plants Against Fusarium Wilt Disease by Bioagent Fungi (Arbuscular Mycorrhiza) And/or Hormonal Elicitors (Jasmonic Acid & Salicylic Acid): 1- Changes in Growth, Some Metabolic Activities and Endogenous Hormo. *Aust J Basic Appl Sci.* 1(4):691–705.
- Koh J, Morales-Contreras BE, Guerra-Rosas MI, Osorio-Hernández E, Culver CA, Morales-Castro J, Wicker L. 2020. Huanglongbing disease and quality of pectin and fruit juice extracted from Valencia oranges. *Lwt.* 131(July):109692. doi:10.1016/j.lwt.2020.109692. <https://doi.org/10.1016/j.lwt.2020.109692>.
- Koske RE, Gemma JN. 1989. A modified procedure for staining roots to detect VA mycorrhizas. *Mycol Res.* 92(4):486–488. doi:10.1016/S0953-7562(89)80195-9. [http://dx.doi.org/10.1016/S0953-7562\(89\)80195-9](http://dx.doi.org/10.1016/S0953-7562(89)80195-9).
- Krüger M, Stockinger H, Krüger C, Schüßler A. 2009. DNA-based species level detection of Glomeromycota: One PCR primer set for all arbuscular mycorrhizal fungi. *New Phytol.* 183(1):212–223. doi:10.1111/j.1469-8137.2009.02835.x.

- Kumar S, Awasthi OP, Dubey AK, Pandey R, Sharma VK, Mishra AK, Sharma RM. 2018. Root morphology and the effect of rootstocks on leaf nutrient acquisition of Kinnow mandarin (*Citrus nobilis* Loureiro x *Citrus reticulata* Blanco). *J Hortic Sci Biotechnol.* 93(1):100–106. doi:10.1080/14620316.2017.1345333. <https://doi.org/10.1080/14620316.2017.1345333>.
- Lee J, Lee S, Young JPW. 2008. Improved PCR primers for the detection and identification of arbuscular mycorrhizal fungi. *FEMS Microbiol Ecol.* 65(2):339–349. doi:10.1111/j.1574-6941.2008.00531.x.
- Lee JA, Halbert SE, Dawson WO, Robertson CJ, Keesling JE, Singer BH. 2015. Asymptomatic spread of huanglongbing and implications for disease control. *Proc Natl Acad Sci U S A.* 112(24):7605–7610. doi:10.1073/pnas.1508253112.
- Lee KJ, Lee KH, Tamolang-castillo E, Budi SW. 2009. Biodiversity_ spore density and root colonization of Arbuscular Mycorrhizal fungi at Expressway Cut-slopes in Korea.pdf. 98(5).
- Li J, Li L, Pang Z, Kolbasov VG, Ehsani R, Carter EW, Wang N. 2019. Developing citrus huanglongbing (HLB) management strategies based on the severity of symptoms in HLB-endemic citrus-producing regions. *Phytopathology.* 109(4):582–592. doi:10.1094/PHYTO-08-18-0287-R.
- Lin CY, Tsai CH, Tien HJ, Wu ML, Su HJ, Hung TH. 2017. Quantification and ecological study of ‘*Candidatus Liberibacter asiaticus*’ in citrus hosts, rootstocks and the Asian citrus psyllid. *Plant Pathol.* 66(9):1555–1568. doi:10.1111/ppa.12692.
- Lopes SA, Frare GF. 2008. Graft transmission and cultivar reaction of citrus to “*Candidatus liberibacter americanus*.” *Plant Dis.* 92(1):21–24. doi:10.1094/PDIS-92-1-0021.
- Lü L-H, Zou Y-N, Wu Q-S. 2018. Relationship Between Arbuscular Mycorrhizas and Plant Growth: Improvement or Depression? (May):451–464. doi:10.1007/978-3-319-75910-4_18.
- Madden L V., Turechek WW, Nita M. 2002. Evaluation of generalized linear mixed models for analyzing disease incidence data obtained in designed experiments. *Plant Dis.* 86(3):316–325. doi:10.1094/PDIS.2002.86.3.316.
- Mattos-Jr D, Kadyampakeni DM, da Silva JR, Vashisth T, Boaretto RM. 2020. Reciprocal effects of huanglongbing infection and nutritional status of citrus trees: a review. *Trop Plant Pathol.* doi:10.1007/s40858-020-00389-y.
- Mitra D, Djebaili R, Pellegrini M, Mahakur B, Sarker A, Chaudhary P, Khoshru B, Gallo M Del, Kitouni M, Barik DP, et al. 2021. Arbuscular mycorrhizal symbiosis: plant growth improvement and induction of resistance under stressful conditions. *J Plant Nutr.* 44(13):1993–2028. doi:10.1080/01904167.2021.1881552.
- Montoliu-Nerin M, Sánchez-García M, Bergin C, Kutschera VE, Johannesson H, Bever JD, Rosling A. 2021. In-depth Phylogenomic Analysis of Arbuscular Mycorrhizal Fungi Based on a Comprehensive Set of de novo Genome Assemblies. *Front Fungal Biol.* 2(September):1–13. doi:10.3389/ffunb.2021.716385.
- de Moraes Pontes JG, Vendramini PH, Fernandes LS, de Souza FH, Pilau EJ, Eberlin MN, Magnani RF, Wulff NA, Fill TP. 2020. Mass spectrometry imaging as a potential technique for diagnostic of Huanglongbing disease using fast and simple sample preparation. *Sci Rep.* 10(1). doi:10.1038/s41598-020-70385-4.
- Moreira M, Baretta D, Siu MT, Cardoso EJBN. 2006. Spore density and root colonization by arbuscular mycorrhizal fungi in preserved or disturbed *Araucaria angustifolia* (Bert.) O. Ktze. *ecosystems. Sci Agric.* 63(4):380–385. doi:10.1590/s0103-90162006000400009.

- Morgan JK, Zhou L, Li W, Shatters RG, Keremane M, Duan YP. 2012. Improved real-time PCR detection of “*Candidatus Liberibacter asiaticus*” from citrus and psyllid hosts by targeting the intragenic tandem-repeats of its prophage genes. *Mol Cell Probes*. 26(2):90–98. doi:10.1016/j.mcp.2011.12.001. <http://dx.doi.org/10.1016/j.mcp.2011.12.001>.
- Morton JB, Msiska Z. 2010. Phylogenies from genetic and morphological characters do not support a revision of Gigasporaceae (Glomeromycota) into four families and five genera. *Mycorrhiza*. 20(7):483–496. doi:10.1007/s00572-010-0303-9.
- Mukherjee A, Ané JM. 2011. Germinating spore exudates from arbuscular mycorrhizal fungi: Molecular and developmental responses in plants and their regulation by ethylene. *Mol Plant-Microbe Interact*. 24(2):260–270. doi:10.1094/MPMI-06-10-0146.
- Munarti, Wulan A, Utami A. 2019. EXPLORATION AND IDENTIFICATION OF ARBUSCULAR MYCORRHIZAL FUNGI FROM THE RHIZOSPHERE OF CHILI PLANTS (*Capsicum Annum* L) IN BOGOR. *J Sci Innovare*. 1(02):50–53. doi:10.33751/jsi.v1i02.1001.
- Nuro F. 2017. METAGENOM : Penelusuran Makhluk Tak Kasat Mata dalam Tanah. *BioTrends Maj Pop Bioteknol*. 8(2):7–14.
- Nzanza B, Marais D, Soundy P. 2012. Yield and nutrient content of tomato (*Solanum lycopersicum* L.) as influenced by *Trichoderma harzianum* and *Glomus mosseae* inoculation. *Sci Hortic (Amsterdam)*. 144(September):55–59. doi:10.1016/j.scienta.2012.06.005. <http://dx.doi.org/10.1016/j.scienta.2012.06.005>.
- O'Connor PJ, Smith SE, Smith FA. 2001. Arbuscular mycorrhizal associations in the southern Simpson Desert. *Aust J Bot*. 49(4):493–499. doi:10.1071/BT00014.
- Octavianti EkN, Ermavitalini D. 2014. 6871-20545-1-Pb. 3(2).
- Orlic JD, Cmelik Z, Redzepovic S. 2008. Influence of arbuscular mycorrhizal fungi on fruit rootstocks. *Acta Hortic*. 767(March):393–395. doi:10.17660/actahortic.2008.767.43.
- Ortas I. 2012. Mycorrhiza in Citrus. Srivastava AK, editor. https://www.researchgate.net/publication/285944054_Mycorrhiza_in_Citrus_Growth_and_Nutrition.
- Padhi EMT, Maharaj N, Lin SY, Mishchuk DO, Chin E, Godfrey K, Foster E, Polek M, Leveau JHJ, Slupsky CM. 2019. Metabolome and microbiome signatures in the roots of citrus affected by huanglongbing. *Phytopathology*. 109(12):2022–2032. doi:10.1094/PHYTO-03-19-0103-R.
- Pagliaccia D, Shi J, Pang Z, Hawara E, Clark K, Thapa SP, De Francesco A, Liu J, Tran TT, Bodaghi S, et al. 2017. A pathogen secreted protein as a detection marker for citrus huanglongbing. *Front Microbiol*. 8(OCT). doi:10.3389/fmicb.2017.02041.
- Parnell S, Camilleri M, Diakaki M, Schrader G, Vos S. 2019. Pest survey card on Huanglongbing and its vectors. *EFSA Support Publ*. 16(4). doi:10.2903/sp.efsa.2019.en-1574.
- Paudyal KP. 2016. Technological Advances in Huanglongbing (HLB) or Citrus Greening Disease Management. *J Nepal Agric Res Counc*. 1(August):41–50. doi:10.3126/jnarc.v1i0.15735.
- Ramsey JS, Chavez JD, Johnson R, Hosseinzadeh S, Mahoney JE, Mohr JP, Robison F, Zhong X, Hall DG, Maccoss M, et al. 2017. Protein interaction networks at the host–microbe interface in *Diaphorina citri*, the insect vector of the citrus greening pathogen. *R Soc Open Sci*. 4(2). doi:10.1098/rsos.160545.
- Rao MJ, Ding F, Wang N, Deng X, Xu Q. 2018. Metabolic Mechanisms of Host Species Against Citrus Huanglongbing (Greening Disease). *CRC Crit Rev Plant Sci*. 37(6):496–511. doi:10.1080/07352689.2018.1544843. <https://doi.org/10.1080/07352689.2018.1544843>.

- Read, Fremont. 1935. Factors that Influence the Formation and Development of Mycorrhizal Association in Citrus Root. *Nature*. 315(3939):517.
- Redecker D, Schüßler A, Stockinger H, Stürmer SL, Morton JB, Walker C. 2013. An evidence-based consensus for the classification of arbuscular mycorrhizal fungi (Glomeromycota). *Mycorrhiza*. 23(7):515–531. doi:10.1007/s00572-013-0486-y.
- Schober P, Schwarte LA. 2018. Correlation coefficients: Appropriate use and interpretation. *Anesth Analg*. 126(5):1763–1768. doi:10.1213/ANE.0000000000002864.
- Schüßler A, Walker C. 2010. A species list with new families and new genera. *The Glomeromycota*. (December):57.
- Shokrollah H, Abdullah TL, Sijam K, Abdullah SNA. 2010. Ultrastructures of *Candidatus Liberibacter asiaticus* and its damage in huanglongbing (HLB) infected citrus. *African J Biotechnol*. 9(36):5897–5901. doi:10.5897/AJB10.438.
- Singh J, Behal A, Singla N, Joshi A, Birbian N, Singh S, Bali V, Batra N. 2009. Metagenomics: Concept, methodology, ecological inference and recent advances. *Biotechnol J*. 4(4):480–494. doi:10.1002/biot.200800201.
- Song F, Bai F, Wang J, Wu L, Jiang Y, Pan Z. 2020. Influence of citrus scion/rootstock genotypes on arbuscular mycorrhizal community composition under controlled environment condition. *Plants*. 9(7):1–16. doi:10.3390/plants9070901.
- Song F, Pan Z, Bai F, An J, Liu J, Guo W, Bisseling T, Deng X, Xiao S. 2015. The scion/rootstock genotypes and habitats affect arbuscular mycorrhizal fungal community in citrus. *Front Microbiol*. 6(DEC):1–11. doi:10.3389/fmicb.2015.01372.
- da Sousa L da S, Correia TS, dos Farias F dos S, Santana MDF, Lara TS. 2023. Influence of arbuscular mycorrhizal fungi density on growth and metabolism of *Handroanthus serratifolius* (Vahl) S.O. Grose seedlings. *Physiol Plant*. 175(6):1–14. doi:10.1111/ppl.14067.
- Srivastava AK. 2012. Advances in citrus nutrition.
- Subandiyah S, Iwanami T, Beattie A. 2007. Perkembangan penelitian cvpd di universitas gadjah mada. :53–59.
- Supriyanto A, Dwiastuti ME, Triwiratno A, Endarto O, Suhariyono. 2010. Pengelolaan terpadu kebun jeruk sehat. Strategi pengendalian penyakit CVPD. <http://balitjestro.litbang.deptan.go.id>.
- Susila E, Rukmana S, Sagita O, Achmad BS, Maulina F, Pertanian P, Payakumbuh N, Crop H, Program S, Pertanian P, et al. 2022. EXPLORATION AND MORPHOLOGY IDENTIFICATION OF SPORES. 6(1):20–30.
- Tahat MM, . K, . S, Othman R. 2010. Mycorrhizal Fungi as a Biocontrol Agent. *Plant Pathol J*. 9(4):198–207. doi:10.3923/ppj.2010.198.207.
- Taruna Shafa Arzam AR, Musa Y, Tahir MM, Riadi M. 2019. Growth and quality of selayar citrus fruit at the different rootstock. *Int J Sci Technol Res*. 8(7):816–819.
- Tian L, Zou YN, Wu QS, Kuča K. 2021. Mycorrhiza-induced plant defence responses in trifoliolate orange infected by *Phytophthora parasitica*. *Acta Physiol Plant*. 43(3):1–8. doi:10.1007/s11738-021-03216-2. <https://doi.org/10.1007/s11738-021-03216-2>.
- Tirado-Corbalá R, Rivera-Ocasio D, Segarra-Carmona A, Román-Paoli E, González A. 2018. Performance of two citrus species grafted to different rootstocks in the presence of huanglongbing disease in puerto Rico. *Horticulturae*. 4(4). doi:10.3390/horticulturae4040038.
- Toh SC, Lihan S, Chuan B, Yong W, Tiang BR, Abdullahi R, Edward R, Samarahan K, Ecology E. 2018. Malaysian Journal of Microbiology selected plant roots and their rhizosphere

- soil environment. *Malays J Microbiol.* 14(14):335–343.
- Ujvári G, Turrini A, Avio L, Agnolucci M. 2021. Possible role of arbuscular mycorrhizal fungi and associated bacteria in the recruitment of endophytic bacterial communities by plant roots. *Mycorrhiza.* 31(5):527–544. doi:10.1007/s00572-021-01040-7. <https://doi.org/10.1007/s00572-021-01040-7>.
- Urcoviche RC, Castelli M, Márcio R, Gimenes T, Alberton O. 2014. Spore density and diversity of Arbuscular mycorrhizal fungi in medicinal and seasoning plants. *African J Agric Res.* 9(16):1244–1251. doi:10.5897/AJAR2013.8025. <http://www.academicjournals.org/journal/AJAR/article-full-text-pdf/F5B34FF43959>.
- Valdés R, Ortiz J, Beache M, Cabello J, Chávez E, OchoaFuentes Y, Pagaza Y. 2016. A review of techniques for detecting huanglongbing (Greening) in citrus. *Can J Microbiol.* 62(10). doi:10.1139/cjm-2016-0022.
- Wang N, Pierson EA, Setubal JC, Xu J, Levy JG, Zhang Y, Li J, Rangel LT, Martins J. 2017. The Candidatus Liberibacter-Host Interface: Insights into Pathogenesis Mechanisms and Disease Control. *Annu Rev Phytopathol.* 55(June):451–482. doi:10.1146/annurev-phyto-080516-035513.
- Wu QS. 2017. Arbuscular mycorrhizas and stress tolerance of plants.
- Wu QS, Srivastava AK, Zou YN, Malhotra SK. 2017. Mycorrhizas in citrus : Beyond soil fertility and plant nutrition. *Indian J Agric Sci.* 87(4):427–443. doi:10.56093/ijas.v87i4.69308.
- Wu QS, Sun P, Srivastava AK. 2017. AMF diversity in citrus rhizosphere. *Indian J Agric Sci.* 87(5):653–656. doi:10.56093/ijas.v87i5.70187.
- Xi MY, Deyett E, Stajich JE, El-Kereamy A, Roper MC, Rolshausen PE. 2023. Microbiome diversity, composition and assembly in a California citrus orchard. *Front Microbiol.* 14. doi:10.3389/fmicb.2023.1100590.
- Yang C, Ancona V. 2021. Metagenomic Analysis Reveals Reduced Beneficial Microorganism Associations in Roots of Foot-Rot-Affected Citrus Trees. *Phytobiomes J.* 5(3). doi:10.1094/PBIOMES-07-20-0049-R.
- Yang L, Zou YN, Tian ZH, Wu QS, Kuča K. 2021. Effects of beneficial endophytic fungal inoculants on plant growth and nutrient absorption of trifoliolate orange seedlings. *Sci Hortic (Amsterdam).* 277(May 2020). doi:10.1016/j.scienta.2020.109815.
- Yaqub MS, Khan IA, Usman M, Rana IA. 2017. Molecular detection of Candidatus liberibacter asiaticus, the causal organism of huanglongbing (Citrus greening) in Faisalabad, Pakistan for Huanglongbing management. *Pakistan J Agric Sci.* 54(1):21–26. doi:10.21162/PAKJAS/17.4455.
- Yulianti F, Adiredjo AL, Soetopo L, Ashari S. 2020. Short communication: Morphology and genetic characteristics of potential citrus rootstock in Indonesia. *Biodiversitas.* 21(11):5514–5520. doi:10.13057/biodiv/d211160.
- Zainuri Hanif. 2020. Pengembangan Agribisnis Jeruk Nusantara. *Iptek Hortik.* No. 16-N(Gambar 2):27–30.
- Zhang M, Guo Y, Powell CA, Doud MS, Yang C, Duan Y. 2014. Effective antibiotics against “Candidatus Liberibacter asiaticus” in HLB-affected citrus plants identified via the graft-based evaluation. *PLoS One.* 9(11):17–21. doi:10.1371/journal.pone.0111032.
- Zhou C. 2020. The status of citrus Huanglongbing in China. *Trop Plant Pathol.* 45:279–284. doi:10.1007/s40858-020-00363-8/Published. <https://doi.org/10.1007/s40858-020-00363-8>.