

DAFTAR PUSTAKA

- Abarna, R., & Anith, K.N. Defence-inducing biocontrol bacteria associated with *Piper* spp. suppress foliar infection of black pepper by *Phytophthora capsici*. *Tropical plant pathology*, 50, 81 (2025). <https://doi.org/10.1007/s40858-025-00760-x>
- Abdullah, J.T., Suryanti & T. Joko, 2024. Application of silica nanoparticles in combination with *Bacillus velezensis* and *Bacillus thuringiensis* for anthracnose disease control in shallot. *Pakistan Journal of Biological Sciences.*, 27: 80-89. DOI: 10.3923/pjbs.2024.80.89
- Aguirre-Medina, J. F., Cadena-Iñiguez, J., Olgún-Hernández, G., Aguirre-Cadena, J. F., & Andrade-Luna, M. I. 2021. Co-Inoculation of *Sechium edule* (Jacq.) Sw. Plants with *Rhizophagus intraradices* and *Azospirillum brasilense* to Reduce *Phytophthora capsici* Damage. *Journal of Agriculture*, 11(5):391. doi.org/10.3390/agriculture11050391
- Alayya, N. P., & Prasetya, B. 2022. Kepadatan Spora dan Persen Koloni Mikoriza Vesikula Arbuskula (MVA) pada Beberapa Tanaman Pangan di Lahan Pertanian Kecamatan Jabung Malang. *Jurnal Tanah Sumberdaya Lahan*, 9(2): 267-276. doi.org/10.21776/ub.jtsl.2022.009.2.7
- Anju, Chitra, N., Natarajan, R., Preetha, S., Rajan, V. & Soumya, K.N. 2023. Bacterization with Endospore-forming *Bacillus* spp. Promotes Plant Growth and Suppresses Foot Rot Disease in Black Pepper (*Piper nigrum* L.) in the Nursery. *Journal Pure Applied Microbiology*, 17(2):768-779. doi.org/10.22207/JPAM.17.2.02
- Aseel, D.G., Rashad, Y.M. & Hammad, S.M. 2019. Arbuscular Mycorrhizal Fungi Trigger Transcriptional Expression of Flavonoid and Chlorogenic Acid Biosynthetic Pathways Genes in Tomato against Tomato Mosaic Virus. *Science Report*, 9, 9692. doi.org/10.1038/s41598-019-46281-x
- Ashraf, H., Anjum, T., Riaz, S., Batool, T., Naseem, S., & Li, G. 2022. Sustainable synthesis of microwave-assisted IONPs using *Spinacia oleracea* L. for control of fungal wilt by modulating the defense system in tomato plants. *Journal of Nanobiotechnology*, 20(1). [doi: 10.1186/s12951-021-01204-9](https://doi.org/10.1186/s12951-021-01204-9)
- Ávila-Oviedo, J.L.; Méndez Inocencio, C.; Rodríguez-Torres, M.D.; Angoa-Pérez, M.V.; Chávez-Avilés, M.N.; Martínez-Mendoza, E.K.; Oregel-Zamudio, E.; & Villar-Luna, E. 2024. Antagonistic Effects and Volatile Organic Compound Profiles of Rhizobacteria in the Biocontrol of *Phytophthora capsici*. *Journal Plants*, 13, 3224. <https://doi.org/10.3390/plants13223224>
- Balleza, D., Alessandrini, A. & Beltrán García, M.J. 2019. Role of Lipid Composition, Physicochemical Interactions, and Membrane Mechanics in the Molecular Actions of

- Microbial Cyclic Lipopeptides. *Journal Membrane Biology*, 252: 131–157. doi.org/10.1007/s00232-019-00067-4
- Bhattacharjee A, Qafoku O, Richardson JA, Anderson LN, Schwarz K, Bramer LM, Lomas GX, Orton DJ, Zhu Z, Engelhard MH, Bowden ME, Nelson WC, Jumpponen A, Jansson JK, Hofmockel KS, Anderton CR. 2022. A Mineral-Doped Micromodel Platform Demonstrates Fungal Bridging of Carbon Hot Spots and Hyphal Transport of Mineral-Derived Nutrients. *American Society for Microbiology*, 20(7):6 doi: 10.1128/msystems.00913-22.
- Bidondo, L.F., Colombo, R., Bompadre, J., Benavides, M., Scorza, V., Silvani, V., Périgola, M. & Godeas, A. 2016. Cultivable Bacteria Associated with Infective Propagules of Arbuscular Mycorrhizal Fungi: Implications for Mycorrhizal Activity. *Journal Applied Soil Ecology*, 105: 86-90. doi.org/10.1016/j.apsoil.2016.04.013
- Blair J. E, Michael D. Coffey, Sook-Young Park, David M. Geiser, & Seogchan Kang. 2008. A multi-locus phylogeny for *Phytophthora* utilizing markers derived from complete genome sequences. *Fungal Genetics and Biology*, 45(3): 266-277, <https://doi.org/10.1016/j.fgb.2007.10.010>.
- Brundrett, M., Bougher, N., Dell, B., Grove, T. & Malajczuk, N. 1996. Working with Mycorrhizas in Forestry and Agriculture. *ACIAR Monograph*, 32(374)
- Campanella, V., Mostacci, A., Mandalà, C., Vita, P. D., Petralia, R., Incerti, O., Ippolito, A., & Sanzani, S. M. 2025. Biocontrol potential of *Bacillus velezensis* against *Fusarium* foot rot in durum wheat: insights from *in vitro* and *in vivo* trials. *Eur Journal Plant Pathology*, 174: 171-187. <https://doi.org/10.1007/s10658-025-03121-1>
- Chen, W., Meng, P., Fengand, H., & Wang, C. 2020. Effects of Arbuscular Mycorrhizal Fungi on Growth and Physiological Performance of *Catalpa bungei* C.A.Mey. under Drought Stress. *Forest*, 11(10):1117. DOI:10.3390/f11101117
- Choudhary, D. K., Varma, A., & Tuteja, N. 2017. Mycorrhizal helper bacteria: Sustainable mycorrhiza function, diversity, state of the art. In *Plant-Microbe Interaction: An Approach to Sustainable Agriculture* (pp. 61–74). Springer International Publishing. https://doi.org/10.1007/978-3-319-53064-2_5
- Correa,P.A. & Nosheen, A. 2024. Direct Submission *Bacillus velezensis* strain Pac2 16S ribosomal RNA gene, partial sequence. GenBank: PQ555689.1. <https://www.ncbi.nlm.nih.gov/nuccore/PQ555689>
- Ćosić A, Nadia I, & Altijana HJ. 2023. Molecular analysis of 16s-rRNA and associated gene segments for identification of probiotic phenotypes. *Biology, Medicine, and Natural Product Chemistry*, 11(2):62-77



- Delaeter M, Magnin-Robert M, Randoux B, & Lounès-Hadj Sahraoui A. 2024. Arbuscular Mycorrhizal Fungi as Biostimulant and Biocontrol Agents: A Review. *Microorganism*, 24;12(7):1281. doi: 10.3390/microorganisms12071281.
- Direktorat Jenderal Perkebunan Indonesia. (2024). Statistik Perkebunan Volume I 2022–2024 (Komoditas Lada). Direktorat Jenderal Perkebunan, Kementerian Pertanian Republik Indonesia. Diakses dari <https://ditjenbun.pertanian.go.id/buku-statistik-perkebunan-jilid-i-2022-2024/>
- Farooq U., Cheng, LiHong., Zhang, Hui., Wang, Qian., Wang, YuanChao., Hirokazu, Kawagishi., & Qi, JianHua. 2018. Inhibitors of sporangia formation of *Phytophthora capsici* from *Polygonum capitatum*. *Tropical Journal of Nature Product Research*, 2(7):358-361. doi:10.26538/TJNPR/V2I7.10
- Feira AR, Z Arifin & Sunarti. 2014. Posisi Daya Saing dan Spesialisasi Perdagangan Lada Indonesia Dalam Menghadapi Globalisasi (Studi Pada Ekspor Lada Indonesia Tahun 2009-2013). *Jurnal Administrasi Bisnis*, 27(2): 1-7.
- Fiona, H.M., Tang, M., Lenzen, M., McBratney, A.B. & Maggi, F. 2021. Risk of Pesticide Pollution at the Global Scale. *Nature Geoscience*, 14:206–210. doi.org/10.1038/S41561-021-00712-5
- Fira Djordje, Ivica Dimkić, Tanja Berić, Jelena Lozo & Slaviša Stanković. 2018. Biological control of plant pathogens by *Bacillus* species. *Journal Biotechnology*, 285: 44-55. doi.org/10.1016/j.jbiotec.2018.07.044.
- Frey-Klett P, Garbaye J, & Tarkka M. 2007. The mycorrhiza helper bacteria revisited. *New Phytology*, 176:22–36. doi:10.1111/j.1469-8137.2007.02191.x
- Glosier, B.R., Ogundiwin, E.A., Sidhu, G.S., Sischo, D.R., & Prince, J. P. (2008). A differential series of pepper (*Capsicum annum*) lines delineates fourteen physiological races of *Phytophthora capsici*. *Euphytica*, 162, 23–30.
- González-Abradelo, D., Ruíz de León, L., Gesto-Borroto, R., Moreno-Perlín, T., Del C Sánchez-Castellanos, N., Pérez-Llano, Y., Cabral-Miramontes, J., Aréchiga-Carbajal, E., Del Rayo Sánchez-Carbente, M., Gostinčar, C., & Gunde-Cimerman C., Batista-García R. A. 2025. Cellular responses of *Aspergillus sydowii* to growth at extreme chaotropic concentrations of MgCl₂. *Microbiological Research*, 303. <https://doi.org/10.1016/j.micres.2025.128390>
- Guo, Y., Ghirardo, A., Weber, B., Schnitzler, J.P., Benz, J.P. & Rosenkranz, M. 2019. Trichoderma Species Differ in Their Volatile Profiles and in Antagonism Toward Ectomycorrhiza *Laccaria bicolor*. *Frontiers Microbiology*, 10:891. doi.org/10.3389/fmicb.2019.00891



- Hammer, E. C., Nasr, H., Pallon, J., Olsson, P. A., & Wallander, H. 2011. Elemental composition of arbuscular mycorrhizal fungi at high salinity. *Mycorrhiza*, 21: 117–129. DOI 10.1007/s00572-010-0316-4
- Hu, J., Hou, S. & Li, M. 2020. The Better Suppression of Pepper *Phytophthora* Blight by Arbuscular Mycorrhizal (AM) Fungus than *Purpureocillium lilacinum* Alone or Combined with AM Fungus. *Journal Soils Sediments*, 20: 792–800. doi.org/10.1007/s11368-019-02438-9
- Jadhav, H.P., Shaikh, S.S., & Sayyed, R. Z. 2017. Role of Hydrolytic Enzymes of Rhizoflora in Biocontrol of Fungal Phytopathogens: An Overview. In: Mehnaz, S. (eds) Rhizotrophs: Plant Growth Promotion to Bioremediation. *MICRO*, 2. doi.org/10.1007/978-981-10-4862-3_9
- Jezdinský, A., Vojtíšková, J., Slezák, K., Petříková, K., & Pokluda, R. 2012. Effect of drought stress and *Glomus* inoculation on selected physiological processes of sweet pepper (*Capsicum annuum* L. cv. 'Slávy'). *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 60(3):69-76. DOI:10.11118/actaun201260030069
- Jibat, M., & Alo, S. (2021). Characterization of *Phytophthora capsici* foot rot disease of black pepper in Ethiopia. *Journal of Plant Pathology and Microbiology* 12:537. <https://www.researchgate.net/publication/357241570>
- Kamoun, S., Furzer, O., Jones, J.D.G., Judelson, H.S., Ali, G.S., Dalio, R.J.D., Roy, S.G., Schena, L., Zambounis, A., Panabières, F., Cahill, D., Ruocco, M., Figueiredo, A., Chen, X.-R., Hulvey, J., Stam, R., Lamour, K., Gijzen, M., Tyler, B.M., Grünwald, N.J., Mukhtar, M.S., Tomé, D.F.A., Tör, M., Van Den Ackerveken, G., McDowell, J., Daayf, F., Fry, W.E., Lindqvist-Kreuzer, H., Meijer, H.J.G., Petre, B., Ristaino, J., Yoshida, K., Birch, P.R.J. & Govers, F. 2015. Top 10 Oomycetes Plant Pathogens. *Plant Pathology*, 16: 413-434. doi.org/10.1111/mpp.12190
- Kementerian Pertanian. 2019. Statistik Perkebunan Indonesia 2018-2020 (Lada). Jakarta: Direktorat Jenderal Perkebunan Kementerian Pertanian.
- Kong, J.C., Vu Thanh, T.A., Yeo, F.K.S. and Kueh, K.H. 2022. Characterisation of *Phytophthora capsici* causing foot rot of black pepper (*Piper nigrum* L.) in Julau, Sarawak. *Arch Phytopathol Pflanzenschutz* 55(14): 1686-1712. <https://www.ncbi.nlm.nih.gov/nucore/PV444611>
- Kusvianti D, Widodo & Djoko Prijono. 2014. Pengendalian Penyakit Busuk Pangkal Batang Lada dengan Ekstrak Pinang, Gambir, Sirih, dan Kapur Sirih. *Jurnal Fitopatologi Indonesia*, 10(4): 103–111 DOI: 10.14692/jfi.10.4.103
- Lau Ee Tiing, Akio Tani, Choy Yuen Khew, Yee Qin Chua & Siaw San Hwang. 2020. Plant growth-promoting bacteria as potential bio-inoculants and biocontrol agents to promote

- black pepper plant cultivation. *Microbiology Research*, 240:126-549. doi.org/10.1016/j.micres.2020.126549.
- Ley-López, N., Basilio Heredia, J., San Martín-Hernández, C., Ibarra-Rodríguez, J. R., Angulo-Escalante, M. Á., & García-Estrada, R. S. 2022. Induced biosynthesis of fengycin and surfactin in a strain of *Bacillus amyloliquefaciens* with oomycetocidal activity on zoospores of *Phytophthora capsica*. *Revista Argentina de microbiologia*, 54(3):181–191. doi.org/10.1016/j.ram.2022.03.002
- Li Ye., Xiaoqian, Feng., Xiaoqian, Feng., Xiaoli, Wang., Li, Zheng., & Hongxia, Liu. 2020. Inhibitory effects of *Bacillus licheniformis* BL06 on *Phytophthora capsici* in pepper by multiple modes of action. *Journal Biological Control*, 144:104-210. doi.org/10.1016/j.biocontrol.2020.104210.
- Li, T., Lin, G., Zhang, X., Chen, Y., Zhang, S., & Chen, B. 2014. Relative importance of an arbuscular mycorrhizal fungus (*Rhizophagus intraradices*) and root hairs in plant drought tolerance. *Mycorrhiza*, 24:595–602. doi.org/10.1007/s00572-014-0578-3
- Liang X, Bao Y, Zhang M, Du D, Rao S, Li Y, Wang X, Xu G, Zhou Z, Shen D, Chang Q, Duan W, Ai G, Lu J, Zhou JM, & Dou D. 2023. A *Phytophthora capsici* RXLR effector targets and inhibits the central immune kinases to suppress plant immunity. *New Phytology*, 232(1):264-278. doi: 10.1111/nph.17573.
- Lina, M., Quesada-Ocampo., Camilo, H., Parada-Rojas., Zachariah, R., Hansen., Gregory, Vogel., Christine, D., Smart., Mary, K., Hausbeck., Roselaini, Mendes, do, Carmo., Edgar, Huitema., Rachel, P., Naegele., Chandrasekar, S., Kousik., PA, Tandy., & Kurt, Lamour. 2023. *Phytophthora capsici*: Recent Progress on Fundamental Biology and Disease Management 100 Years After Its Description. *Annual Review of Phytopathology*, 10:1146/annurev-phyto-021622-103801
- Ling L, Luo H, Yang C, Wang Y, Cheng W, Pang M & Jiang K. 2022. Volatile organic compounds produced by *Bacillus velezensis* L1 as a potential biocontrol agent against postharvest diseases of wolfberry. *Frontiers Microbiology*. 13:987844.doi: 10.3389/fmicb.2022.987844
- Liu Y, Gong X, Li M, Si H, Zhou Q, Liu X, Fan Y, Zhang X, Han J, Gu S & Dong J .2021. Effect of Osmotic Stress on the Growth, Development and Pathogenicity of *Setosphaeria turcica*. *Frontiers Microbiology*, 12:706349. doi: 10.3389/fmicb.2021.706349
- Logan, N. A., De Vos, P., Garrity, G. M., Jones, D., Krieg, N. R., Ludwig, W., Rainey, F. A., Schleifer, K. H., & Whitman, W. B. (Eds.). (2009). Genus *Bacillus*. Dalam *Bergey's Manual of Systematic Bacteriology: Volume Three: The Firmicutes* (2nd ed., hlm. 21–128). Springer.
- Luard, J. E. 1982. Accumulation of Intracellular Solutes by Two Filamentous Fungi in Response to Growth at Low Steady State Osmotic Potential. *Journal of General*

- Lwin, K.M., Myint, M.M., Tar, W. Z. Aung. 2012. Isolation of plant hormone (Indole-3-Acetic Acid-IAA) producing rhizobacteria and study on their effects on maize seedling. *Engineering Journal*, 16 (5):137–144. doi.org/10.4186/ej.2012.16.5.137
- Manohara, D., Wahyuno, D. dan Sutrasman, 1993. Kajian tiga isolat *Phytophthora capsici* asal Lada hitam, cabe jawa dan sirih. Kongres XII dan Seminar Ilmiah Perhimpunan Fitopatologi Indonesia, 6-8 September 1993. Yogyakarta. 942 – 947p.
- Mesele Admassie, Enrique González-Pérez, Yitbarek Woldehawariat, Tesfaye Alemu. 2023. Screening of potential bacterial isolats against *Phytophthora capsici* and its plant growth-promoting effect on pepper plants. *Physiological and Molecular Plant Pathology*, 127. doi.org/10.1016/j.pmpp.2023.102028
- Mulya, K., Manohara, D. & Wahyuno, D., 2003. Status Penyakit Busuk Pangkal Batang Lada Hitam di Bangka. Risalah Simposium Nasional Penelitian PHT Perkebunan Rakyat. Bogor, 17-18 September 2002.
- Nair, K.P. 2004. The Agronomy and Economy of Black Pepper (*Piper nigrum* L.)-the " King of Spices". *Advanced Agronomy*, 82:273-392.
- Nanjundappa, A., Davis, J. B., Anil, K. S., Murugan, K., & Hillol, C. 2019. Interaction between arbuscular mycorrhizal fungi and *Bacillus* spp. in soil enhancing growth of crop plants. *Fungal Biology Biotechnology*, 6(23). doi.org/10.1186/s40694-019-0086-5
- Nasserifar, S., & Lew, R. R. 2009. Transient responses during hyperosmotic shock in the filamentous fungus *Neurospora crassa*. *Microbiology*, 155:903–911. doi.org/10.1099/mic.0.023507-0
- Nasslahsen B, Prin Y, Ferhout H, Smouni A & Duponnois R. 2022. Mycorrhizae helper bacteria for managing the mycorrhizal soil infectivity. *Frontiers Soil Science*, 2. doi.org/10.3389/fsoil.2022.979246
- Neha Pal and Joshi M. D. 2020. *Piper nigrum*: An Overview of effects on Human Health. *Journal science technology research*, 12(4). www.anvpublication.org
- Nurdjannah N. 2006. Perbaikan Mutu Lada Dalam Rangka Meningkatkan Daya Saing di Pasar Dunia. *Perspektif*, 5(1): 13-25.
- Ochoa Fuentes, Y.M., E. Cerna, G. Gallegos, G. Landeros, J.C. Delgado, J.C. Hernández, S. Rodríguez & R. Olalde. 2012. Identificación de especies de *Fusarium* en semilla de ajo en Aguascalientes, México. *Revista Mexicana de Micología*, 36: 27-32. www.scielo.org.mx/pdf/rmm/v36/v36a5.pdf
- Onyeaka, H. N., Akinsemolu, A. A., Siyanbola, K. F., & Adetunji, V. A. 2024. Green Microbe Profile: *Rhizophagus intraradices*—A Review of Benevolent Fungi Promoting Plant

- Health and Sustainability. *Microbiology Research*, 15(2), 1028-1049. doi.org/10.3390/microbiolres15020068
- Owais Iqbal., Chengyun, Li., Nasir, Ahmed, Rajput., Abdul, Mubeen, Lodhi. 2024. Management of Phytopathogens by Antagonistic *Bacillus* spp. in Tomato Crop. *Intechopen*, 87748 doi: 10.5772/intechopen.112439
- Putri, E. A., Yuningsih, E., Subandiyah, S., & Joko, T. 2025. Antagonistic potential and plant growth enhancement by endophytic *Bacillus* isolatd from Citrus plants. *Pertanika Journal of Tropical Agricultural Science*, 48(6). <https://doi.org/10.47836/jtas.48.6.24>
- Putri, H. N., Wibowo, A., & Joko, T. 2023. Potential of Compost Enriched with *Bacillus velezensis* B-27 and *Bacillus cereus* RC76 for the Management of Twisted Disease on Shallots. *Indonesian Journal of Plant Protection*, 27 (2). <https://doi.org/10.22146/jpti.77784>
- Qi Li, Ji Wang, Tian Bai, Ming Zhang, Yuling Jia, Danyu Shen, Meixiang Zhang, and Daolong Dou. 2020. A *Phytophthora capsici* effector suppresses plant immunity via interaction with EDS1. *Molecular Plant Pathology* 21: 502–511. doi.org/10.1111/mpp.12912
- Quesada-Ocampo L. M, C.H. Parada-Rojas, Z. Hansen, G. Vogel, C. Smart, M.K. Hausbeck, R.M. Carmo, E. Huitema, R.P. Naegele, C.S. Kousik, P. Tandy, K. Lamour. 2023. *Phytophthora capsici*: Recent Progress on Fundamental Biology and Disease Management 100 Years After Its Description. *Annual Review Phytopathology*. 61:185-208. <https://doi.org/10.1146/annurev-phyto-021622-103801>
- Rahma, A. A., Suryanti, Somowiyarjo, S., & Joko, T. 2020. Induced disease resistance and promotion of shallot growth by *Bacillus velezensis* B-27. *Pakistan Journal of Biological Sciences*, 23(9): 1113–1121. <https://doi.org/10.3923/pjbs.2020.1113.1121>
- Rich K., M., Vigneron, N., Libourel, C., Keller, J., Xue, L., Hajheidhari, M., Radhakrishnan V., G., Le Ru, A., Diop, S.I., Potente, G., Conti, E., Duijsings, D., Batut, A., Le Faouder, P., Kodama, K., Kyozyuka, J., Sallet, E., B´ecard, G., RodriguezFranco, M., Ott, T., Bertrand-Michel, J., Oldroyd, G.E.D., Szov´enyi, P., Bucher, M., Delaux, P.-M., 2021. Lipid exchanges drove the evolution of mutualism during plant terrestrialization. *Journal science*, 372 (6544): 864–868.
- Safitri D, Wiyono S, & Purbajanti ED. 2023. Potential of endophytic yeasts as biocontrol of *Phytophthora capsici*, causative agent of foot rot disease on black pepper. *Biodiversitas*, 24(11): 5847-5853. doi.org/10.13057/biodiv/d241102
- Saini, Neha, Manvika Sahgal, & Ajay Veer Singh. 2024. Mechanisms of Cell Wall Degrading Enzymes from *Bacillus Methylophilus* and *Bacillus Subtilis* in Suppressing Foliar

- Blight Pathogens. *Journal advanced biology and biotechnology*, 27 (8):39-49. doi.org/10.9734/jabb/2024/v27i81136.
- Schurko AM, Mendoza L, Le'vesque CA et al. (2003) A molecular phylogeny of *Pythium insidiosum*. *Mycological Research*, 107, 537–544. <https://doi.org/10.1017/S0953756203007718>
- Shi, J., Wang, X., & Wang, E. 2023. Mycorrhizal symbiosis in plant growth and stress adaptation: from genes to ecosystems. *Annu. Rev. Plant Biology*, 74: 569–607.
- Sivaraman, K., Kandianann, K., Peter, K.V. & Thankamani, C.K. 1999. Agronomy of Black Pepper (*Piper nigrum* L.). *JOSAC*, 8(1):1-18.
- Smith, S. E., & Read, D. J. (2008). Colonization of roots and anatomy of arbuscular. In *Mycorrhizal Symbiosis* (3rd ed., pp. 42–89). Academic Press.
- Soum Sanogo, Pingsheng Ji. 2013. Water management in relation to control of *Phytophthora capsici* in vegetable crops. *Agriculture Water Management*, 129:113-119. doi.org/10.1016/j.agwat.2013.07.018.
- Syakir, M. & Zaubin, R. 1994. Pengadaan Bahan Tanaman Lada Perdu', dalam *Prosiding Simposium II Penelitian dan Pengembangan Tanaman Industri*. Puslitbang Tanaman Industri, Bogor, 21 – 23 November 1994. 161-171pp.
- Tallapragada, P., Dikshit, R., & Seshagiri, S. 2016. Influence of *Rhizophagus* spp. and *Burkholderia seminalis* on the Growth of Tomato (*Lycopersicon esculatum*) and Bell Pepper (*Capsicum annum*) under Drought Stress. *Communications in Soil Science and Plant Analysis*, 47(17):1975-1984, DOI: 10.1080/00103624.2016.1216561
- Trinh, T.H.T., Wang, SL., Nguyen, V.B. 2019. A potent antifungal rhizobacteria *Bacillus velezensis* RB.DS29 isolatd from black pepper (*Piper nigrum* L.). *Research Chemical Intermediate*, 45:5309–5323. doi.org/10.1007/s11164-019-03971-5
- Volynchikova E & Kim KD. 2022. Biological Control of Oomycete Soilborne Diseases Caused by *Phytophthora capsici*, *Phytophthora infestans*, and *Phytophthora nicotianae* in Solanaceous Crops. *Mycobiology* 2;50(5):269-293. doi:10.1080/12298093.
- Xavier, L.J.C., Germida, J.J., 2003. Bacteria associated with *Glomus clarum* spores influence mycorrhizal activity. *Soil Biology Biochemistry*. 35 (3), 471–478.
- Zhang Junling, Ruotong Zhao, Xia Li, & Jiangzhou Zhang. 2024. Potential of arbuscular mycorrhizal fungi for soil health: A review. *Pedosphere*, 34(2):279-288. doi.org/10.1016/j.pedsph.2024.02.002.
- Zhang, B., Dong, C., Shang, Q., Han, Y., & Li, P. 2013. New insights into membrane-active action in plasma membrane of fungal hyphae by the lipopeptide antibiotic bacillomycin L. *Biochimica et Biophysica Acta* 1828(9):2230. doi: 10.1016/J.BBAMEM.2013.05.033.



Potensi Jamur Mikoriza Arbuskular dan *Bacillus velezensis* sebagai Agens Biokontrol Penyakit Busuk

Shintia Effendi, Dr. Suryanti, S.P., M. P.; Prof. Tri Joko, S.P., M.Sc., Ph.D.

Universitas Gadjah Mada, 2026 | Diunduh dari <http://etd.repository.ugm.ac.id/>

UNIVERSITAS
GADJAH MADA

- Zhang, H., Farooq, U., & Cheng, L.H. 2018. Specific Inhibitors of Sporangium Formation of *Phytophthora capsici* from *Kalimeris indica*. *Chemical Nature Compound*, 54:567–569. doi.org/10.1007/s10600-018-2409-9
- Zhang, Q.; Gong, M.; Liu, K.; Chen, Y.; Yuan, J.; Chang, Q. 2020. *Rhizoglyphus intraradices* improves plant growth, root morphology and Phytohormone balance of *Robinia pseudoacacia* in arsenic-contaminated soils. *Frontiers Microbiology*, 11, 1428. doi.org/10.3389/fmicb.2020.01428
- Zumaila F, Jeevalatha A, Biju CN. 2024. Genetic diversity, mating type and pathogenicity of two *Phytophthora* species infecting black pepper in India. *Biotechnology*, 14(1):1. doi: 10.1007/s13205-023-03843-1