



## DAFTAR PUSTAKA

- Abad, P., Castagnone-Sereno, P., Rosso, M.N., Engler, J.D.A., & Favery, B. 2008. Invasion, feeding and development. In *root-knot nematodes*. Wallingford UK: CABI. pp. 163-181.
- Abbasi, M.W., Ahmed, N., Zaki, M.J., Shuakat, S.S., & Khan, D. 2014. Potential of *Bacillus* species against *Meloidogyne javanica* parasitizing eggplant (*Solanum melongena* L.) and induced biochemical changes. *Plant Soil*. 375: 159–173. <https://doi.org/10.1007/s11104-013-1931-6>
- Abd-Elgawad, M. 2016. Biological control agents of plant-parasitic nematodes. *Egypt J Biol Pest Control*. 26(2): 423–429.
- Abd El-Rahman, A., Shaheen, H.A., Abd El-Aziz, R.M., & Ibrahim, D.S. 2019. Influence of hydrogen cyanide-producing rhizobacteria in controlling the crown gall and root-knot nematode, *Meloidogyne incognita*. *Egypt J Biol Pest Control*. 29: 41. <https://doi.org/10.1186/s41938-019-0143-7>
- Abdel-Salam, M., Ameen, H.H., Soliman, G.M., Elkelany, U., & Asar, A.M. 2018. Improving the nematicidal potential of *Bacillus amyloliquefaciens* and *Lysinibacillus sphaericus* against the root-knot nematode *Meloidogyne incognita* using protoplast fusion technique. *Egypt J Biol Pest Control*. 28(1): 1–6.
- Afzal, I., Shinwari, Z.K., Sikandar, S., & Shahzad, S. 2019. Plant beneficial endophytic bacteria: mechanisms, diversity, host range and genetic determinants. *Microbiol Res*. 221: 36–49. <https://doi.org/10.1016/j.micres.2019.02.001>
- Åhman, J., Johansson, T., Olsson, M., Punt, P.J., van den Hondel, C.A., & Tunlid, A. 2002. Improving the pathogenicity of a nematode-trapping fungus by genetic engineering of a subtilisin with nematotoxic activity. *Appl Environ Microbiol*. 68(7): 3408-15. <https://doi.org/10.1128/AEM.68.7.3408-3415.2002>
- Ahmed, N., Ghramh, H.A., Shakeel, Q., Ashraf, W., Abbas, H.T., Binyamin, R. Masroor, A., Raheel, M., & Khan, Z. 2023. Evaluation of rhizospheric-*Pseudomonas* spp. for the management of *Meloidogyne incognita* in tomato. *Journal of King Saud University-Science*. 35(1): 1–8. <https://doi.org/10.1016/j.jksus.2022.102395>
- Akhtar, A., Hisamuddin, Robab, M.I., Abbasi, & Sharf, R. 2012. Plant growth promoting Rhizobacteria : An overview. *Journal of Natural Product and Plant Resourse*. 2(1): 19–31.
- Ali, S., Hameed, S., Imran, A., Iqbal, M., & Lazarovits, G. 2014. Genetic, physiological and biochemical characterization of *Bacillus* sp. strain RMB7 exhibiting plant growth promoting and broad spectrum antifungal activities. *Microbial Cell Factories*. 13(144): 1–15. <https://doi.org/10.1186/s12934-014-0144-x>
- Aljaafri, W.A.R., McNeece, B.T., Lawaju, B.R., Sharma, K., Niruala, P.N., & Pant S.R. 2017. A harpin elicitor induces the expression of a coiled-coil nucleotide binding leucine rich repeat (CC-NB-LRR) defense signaling gene and others functioning during defense to parasitic nematodes. *Plant Physiology and Biochemistry*. 121: 161-175. <https://doi.org/10.1016/j.plaphy.2017.10.004>
- Alori, E.T. Glick, B.R. & Babalola, O.O. Microbial phosphorus solubilization and its potential for use in sustainable agriculture. *Front. Microbiol*. 8: 1–8.



<https://doi.org/10.3389/fmicb.2017.00971>

- Anonim. 2021. Produksi Dan Produktivitas Tomat (*Solanum lycopersicum*). Diunduh pada tanggal 10 Desember 2022 pukul 22.50.
- Anonim. 1997. Budidaya Tanaman tomat. Jawa Timur.
- Aocheng, C., Meixia, G., Dongdong, Y., Liangang, M., Qiuxia, W., Yuan, L. 2014. Evaluation of sulfuryl fluoride as a soil fumigant in China. *Pest Management Science*, 70(2): 219–227. <https://doi.org/10.1002/ps.3535> PMID:23512505
- Asaturova, A.M., Bugaeva, L.N., Homyak, A.I., Slobodyanyuk, G.A., Kashutina, E.V., Yasyuk, L.V., & Garkovenko, A.V. 2022. *Bacillus velezensis* strains for protecting cucumber plants from root-knot nematode *Meloidogyne incognita* in a greenhouse. *Plants*. 11(3): 275–282. <https://doi.org/10.3390/plants11030275>
- Asyiah, I.N., Prihatin, J., Hastuti, A.D., Winarso, S., Widjayanthi, L., Nugroho, D., & Pradana, A.P. 2021. Cost-effective bacteria-based bionematicide formula to control the root-knot nematode *Meloidogyne* spp. on tomato plants. *Biodiversitas Journal of Biological Diversity*. 22(6): 3256-3264.
- Backer, R., Rokem, J.S., Ilangumaran, G., Lamont, J., Praslickova, D., Ricci, E., Subramanian, S., & Smith, D.L. 2018. Plant growth-promoting rhizobacteria: context, mechanisms of action, and roadmap to commercialization of biostimulants for sustainable agriculture. *Front. Plant Sci.* 9: 1–17. <https://doi.org/10.3389/fpls.2018.01473>.
- Benhamou, N., Belanger, R.R., & Paulitz, T. 1996. Ultrastructural and cytochemical aspects of the interaction between *Pseudomonas fluorescens* and Ri T-DNA transformed pea roots: host response to colonization by *Pythium ultimum*. *Trow. Planta*. 199: 105–117.
- Bird, A.F. 1961. The ultrastructure and histochemistry of a nematode-induced giant cell. *J. Biophys Biochem Cytol.* 11: 701–715.
- Bishop, A. 2011. *Pasteuria penetrans* and its parasitic interaction with plant parasitic nematodes. In *Endospore-Forming Soil Bacteria*. Logan, N.A., de Vos, P., Eds. Springer: Berlin/Heidelberg, Germany. pp. 181–201.
- Bonants, P. J. M., Fitters, P. F. L., Thijs, H., Den Belder, E., Waalwijk, C., & Henfling, J. W. D. M. (1995). A basic serine protease from *Paecilomyces lilacinus* with biological activity against *Meloidogyne* hapla eggs. *Microbiology*, 141(4), 775–784. <https://doi.org/10.1099/13500872-141-4-775>
- Burns, R. G., DeForest, J. L., Marxsen, J., Sinsabaugh, R. L., Stromberger, M. E., Wallenstein, M. D., Weintraub, M.N., & Zoppini, A. (2013). Soilenzymes in a changing environment: current knowledge and future directions. *Soil Biology and Biochemistry*. 58: 216-234. <https://doi.org/10.1016/j.soilbio.2012.11.009>
- Cawoy, H., Bettiol, W., Fickers, P., & Ongena, M. 2011. *Bacillus* based biological control of plant disease. *Pesticides in the Modern World - Pesticide Use and Management*. Pp. 273–302.
- Cazorla, F.M., Romero, D., Pérez-García, A., Lugtenberg, B.J.J., Vicente, A.D., & Bloemberg, G. 2007. Isolation and characterization of antagonistic *Bacillus subtilis* strains from the avocado rhizosphere displaying biocontrol activity. *Journal of applied microbiology*. 103(5): 1950–1959.



- Cetintas, R., Kusek, M., & Fateh, A.S. 2018. Effect of some plant growth-promoting rhizobacteria strains on root-knot nematode, *Meloidogyne incognita* on tomatoes. *Egyptian Journal of Biological Pest Control*. 8(7):1–5. DOI: 10.1186/s41938-017-0008-x
- Chaerani, C. (2022). Plant Parasitic Nematodes in Agricultural Ecosystem of Indonesia. *Jurnal Perlindungan Tanaman Indonesia*, 26(1), 1. <https://doi.org/10.22146/jpti.71037>
- Chu, W.H. 2006. Optimization of extracellular alkaline protease production from species of *Bacillus*. *J Ind Microbiol Biotechnol*. 34:241–245.
- Clous, D. & Berkeley, R.W.C. 1986. Genus *Bacillus*, In: Bergeys Manual of Systematic Bacteriology. Sneath, P.H.A., ed.). Williams and Wilkins, Baltimore: 1105–1139.
- Damayanti, A.P., Rahardjo, B.T., & Tarno, H. 2018. Pengaruh pemberian plant growth promoting rhizobacteria (*Pseudomonas fluorescens*) terhadap nematoda puru akar *Meloidogyne* sp. pada tanaman tomat. *Jurnal HPT*. 6(1): 26–34.
- Das, A., Paul, T., Halder, S.K., Maity, C., Mohapatra, P.K., Pati, B.R., & Mondal, K.C. 2013. Study on regulation of growth and biosynthesis of cellulolytic enzymes from newly isolated *Aspergillus fumigatus* ABK9. *Polish Journal of Microbiology*. 62(1): 31–43. <https://doi.org/10.33073/pjm-2013-004>
- De Oliveira, K. C. L., de Araújo, D. V., de Meneses, A. C., Silva, J. M. E., & Tavares, R. L. C. 2019. Biological management of *Pratylenchus brachyurus* in soybean crops. *Revista Caatinga*. 32(1): 41–51. <https://doi.org/10.1590/1983-21252019v32n105rc>
- Dotaniya, M.L., Meena, V.D., Basak, B.B., & Meena, R.S. 2016. Potassium uptake by crops as well as microorganisms. Potassium solubilizing microorganisms for sustainable agriculture. 267–280.
- Dwimartina, Dwimartina, F., Joko, T., & Arwiyanto, T. 2021. Karakteristik morfologi dan fisiologi bakteri endofit dan rhizobakteri dari tanaman cengkeh sehat. *Agro Wiralodra*. 4(1): 1–8. <https://doi.org/10.31943/agrowiralodra.v4i1.58>
- Ebone, L.A., Kovaleski, M., & Deuner, C. 2019. Nematicides: History, mode, and mechanism action. *Plant Science Today*. 6(2): 91–97.
- Eliza, Munif, A., Djatnika, I., & Widodo. 2007. Karakter fisiologis dan peranan antibiosis bakteri perakaran Graminae terhadap *Fusarium* dan pemacu pertumbuhan tanaman pisang. *J Hort*. 17:150–160.
- El-Nagdi, W. M., & Abd-El-Khair, H. 2019. Application of *Bacillus* species for controlling root-knot nematode *Meloidogyne incognita* in eggplant. *Egyptian Journal of Biological Pest Control*. 4(1): 1–10.
- Engler, JdA., de Siqueira, K., do Nascimento, D., da Costa, T., & Engler, G. 2016. A cellular outlook of galls induced by rootknot nematodes in the model host *Arabidopsis thaliana*. *Nematoda*. 3: 1–6.
- Ferreira, M.J., H. Silva, and A. Cunha. 2019. Siderophore-producing rhizobacteria as a promising tool for empowering plants to cope with iron limitation in saline soils: A review. *Pedosphere*, 29(4): 409–420.
- Fitriana, N., & Asri, M. T. 2021. Aktivitas proteolitik pada enzim protease dari bakteri rhizosphere tanaman kedelai (*Glycine max* L.) di Trenggalek. *LenteraBio: Berkala Ilmiah Biologi*, 11(1), 144–152. <https://doi.org/10.26740/lenterabio.v11n1.p144-152>



- Fujimoto, T., Tomitaka, Y., Abe, H., Tsuda, S., Futai, K., & Mizikubo, T. 2011. Expression profile of jasmonic acid-induced genes and the induced resistance against the root-knot nematode in tomato plants after foliar treatment with methyl jasmonate. *J. Plant Phys.* 168: 1084–1097. doi: 10.1016/j.jplph.2010.12.002
- Gingichashvili, S., Duanis-Assaf, D., Shemesh, M., Featherstone, J. D., Feuerstein, O., & Steinberg, D. 2019. The adaptive morphology of *Bacillus subtilis* biofilms: a defense mechanism against bacterial starvation. *Microorganisms*. 8(1): 62. <https://doi.org/10.3390/microorganisms8010062>
- Glick, B.R. 2012. Plant growth-promoting bacteria: mechanisms and applications. *Scientifica*. 2(1):96-114
- Gnanamanickam, S.S. 2006. *Plant-Associated Bacteria*. Springer. The Netherlands. pp. 1–56
- Graumann, P. 2007. *Bacillus: Cellular and Molecular Biology*. Caister Academic Press. UK.
- Haase, S., Ruess, L., Neumann, G., Marhan, S., & Kandeler, E. 2007. Low-level herbivory by root-knot nematodes (*Meloidogyne incognita*) modifies root hair morphology and rhizodeposition in host plants (*Hordeum vulgare*). *Plant and Soil* 301(1): 151–164. <https://doi.org/10.1007/s11104-007-9431-1>
- Hadioetomo*, R. S., 1985, *Mikrobiologi Dasar-dasar Praktik*. Gramedia. Jakarta
- Harni, R., Munif, A., Supramana, & Mustika, I. 2007. Pemanfaatan bakteri endofit untuk mengendalikan nematoda peluka akar (*Pratylenchus brachyurus*) pada tanaman nilam. *Hayati J Biosci*. 14(1):7–12
- Hashem, A., Tabassum, B., & Fathi Abd\_Allah, E. (2019). *Bacillus subtilis*: A plant-growth promoting rhizobacterium that also impacts biotic stress. *Saudi Journal of Biological Sciences*, 26(6), 1291–1297. <https://doi.org/10.1016/j.sjbs.2019.05.004>
- Hay F, Striling G, Walker G, Keller KO, Cobon J, Vanstone V, Bulman S, Griffin D (2014) *Managemet of Root-Knot Nematode in Vegetable Crops Horticulture Australia Ltd. (HAL)*. Australia.
- Hooper MT 1985 *The Illustrated Encyclopedia of Beekeeping*. England. Blanford Press.
- Hu, H., Gao, Y., Li, X., Chen, S., Yan, S., Tian, X. 2020. Identification and nematicidal characterization of proteases secreted by endophytic bacteria *Bacillus cereus* BCM2. *Phytopathology*. 110(2):336–344. <https://doi.org/10.1094/PHYTO-05-19-0164-R>
- Hussain, M.A., Mukhtar, T., & Kayani, M.Z. 2016. Reproduction of *Meloidogyne incognita* on resistant and susceptible okra cultivars. *Pak. J. Agric. Sci*. 53: 371–375. <https://doi.org/10.21162/PAKJAS/16.4175>
- Ibrahim, A.S.S., Al-Salamah, A.A., Elbadawi, Y.B., El-Tayeb, M.A., & Ibrahim, S.S.S. 2015. Production of extracellular alkaline protease by new halotolerant alkaliphilic *Bacillus* sp. NPST-AK15 isolated from hyper saline soda lakes. *Electronic Journal of Biotechnology*. 18(3): 236–243.
- Ire, F.S., Okolo, B.N., Moneke, A.N., & Odibo, F.J.C. 2011. Influence of cultivation conditions on the production of a protease from *Aspergillus carbonarius* using submerged fermentation. *African Journal of Food Science*. 5(6): 353–365.



- Istiqomah, I., Aini, L.Q., & Abadi, A.L. 2017. Kemampuan *Bacillus subtilis* dan *Pseudomonas fluorescens* dalam melarutkan fosfat dan memproduksi hormon IAA (Indole Acetic Acid) untuk meningkatkan pertumbuhan tanaman tomat. *Buana Sains*. 17(1): 75-84. <https://doi.org/10.33366/bs.v17i1.580>
- Janati, S., Houari, A., Wifaya, A., Essarioui, A., Mimouni, A., Hormatallah, A., Sbaghi, M., Dababat, A.A., & Mokriini, F. 2018. Occurrence of the root-knot nematode species in vegetable crops in souss region of Morocco. *Plant Pathology Journal*. 34(4): 308–315. <https://doi.org/10.5423/PPJ.OA.02.2018.0017>
- Jayanti, R.M., & Tri Joko. 2020. Plant growth promoting and antagonistic potential of endophytic bacteria isolated from melon in Indonesia. *Plant Pathology Journal* 19(3):200–210.
- Jayasinghe, U. 2002. Potato Seed in Indonesia: A Baseline Survey. *Proceedings of the CIP-Indonesia Research Review Workshop*. International Potato Center. Bogor.
- Johnston, M.J., McVeigh, P., McMaster, S., Fleming, C.C., & Maule, A.G. 2010. FMRamide-like peptides in root knot nematodes and their potential role in nematode physiology. *J. Helminthol.* 84: 253–265. <https://doi.org/10.1017/S0022149X09990630>
- Kamalanathan, V., Sevugapperumal, N., & Nallusamy, S. 2023. Antagonistic bacteria *Bacillus velezensis* VB7 possess nematocidal action and induce an immune response to suppress the infection of root-knot nematode (RKN) in tomato. *Genes*. 14(7):1335. <https://doi.org/10.3390/genes14071335>
- Kaşkavalci, G. 2007. Effects of soil solarization and organic amendment treatments for controlling *Meloidogyne incognita* in tomato cultivars in western Anatolia. *Turkish Journal of Agriculture and Forestry*. 31(3): 159–167. <https://doi.org/10.3906/tar-0703-7>
- Katz, D.S. 2008. *The Streak Plate Protocol*. American Society for Microbiology. USA.
- Kaur, H., & Garg, H. 2014. Pesticides: Environmental Impacts and Management Strategies. *In Pesticides - Toxic Aspects*. InTech. London. Pp. 187–230.
- Khotimah, N., & Wijaya, N. 2020. Perkembangan populasi nematoda puru akar (*Meloidogyne* spp.) dan tingkat kerusakan pada beberapa tanaman familia solanaceae. *Jurnal Agroekoteknologi Tropika*. 9(1): 23–31. <https://ojs.unud.ac.id/index.php/JAT>
- Koshy, P.K., Eapen, S.J., & Pandey, R. 2005. Nematode Parasites of Spices. *Condiments and Medicinal Plants*. pp. 751–792.
- Lanna-Filho, R., Ferro, H. M., & Pinho, R. S. C. de. 2010. Controle biológico mediado por *Bacillus subtilis*. *Revista Trópica: Ciências Agrárias e Biológicas*. 4(2): 12–20. <http://www.periodicoseletronicos.ufma.br/index.php/ccaatropica/article/view/145/96>
- Li, L., Sun, Y., Chen, F., Hao, D., & Tan, J. 2023. An alkaline protease from *Bacillus cereus* NJSZ-13 can act as a pathogenicity factor in infection of pinewood nematode. *BMC Microbiology*. 23(1): 1–11. <https://doi.org/10.1186/s12866-022-02752-2>
- Lopes, , E.P., Ribeiro, R.C.F., Xavier, A.A., Alves, R.M., Castro, M.T.D., Martins, M.J., & Santos Neto, J.A.D. 2019. Effect of *Bacillus subtilis* on *Meloidogyne javanica* and on tomato growth promotion. *Journal of Experimental Agriculture*



- International. 35(1): 1–8. <https://doi.org/10.9734/jeai/2019/v35i130197>
- Martínez-Viveros, O., Jorquera, M.A., Crowley, D.E., Gajardo, G., & Mora, M.L 2010. Mechanisms and practical considerations involved in plant growth promotion by rhizobacteria. *J Soil Sci Plant Nutr*, 10(3): 293–319. <https://doi.org/10.4067/S0718-95162010000100006>
- Mbaluto, C.M., Ahmad, E.M., Mädicke, A., Grosser, K., van Dam, N.M., & Martínez-Medina, A. 2021. Induced local and systemic defense responses in tomato underlying interactions between the root-knot nematode *Meloidogyne incognita* and the potato aphid *Macrosiphum euphorbiae*. *Frontiers in Plant Science*. 12: 1–16. <https://doi.org/10.3389/fpls.2021.632212>
- Mekonnen, H., Kibret, M., & Assefa, F. 2022. Plant growth promoting rhizobacteria for biocontrol of tomato bacterial wilt caused by *Ralstonia solanacearum*. *International Journal of Agronomy*, 2(2): 1–9. <https://doi.org/10.1155/2022/1489637>
- Mengistie, G.Y., & Awlache, Z.T. 2022. Evaluation of the plant growth promotion effect of bacillus species on different varieties of tomato (*Solanum lycopersicum* L.) seedlings. *Advances in Agriculture*, 2022. <https://doi.org/10.1155/2022/1771147>
- Miljaković, D., Marinković, J., & Balešević-Tubić, S. 2020. The significance of *Bacillus* spp. in disease suppression and growth promotion of field and vegetable crops. *Microorganisms*. 8(7): 1–19. <https://doi.org/10.3390/microorganisms8071037>
- Mugiastuti, E., Rahayuniati, R.F., & Sulistyanto, P. 2012. Pemanfaatan *Bacillus* sp. dan *Pseudomonas fluorescens* untuk mengendalikan penyakit layu tomat akibat sinergi *R. solanacearum* dan *Meloidogyne* sp. Prosiding Seminar Nasional Pengembangan Sumber Daya Pedesaan dan Kearifan Lokal Berkelanjutan II. 3(1): 72–77
- Mukhtar, T. 2018. Management of root-knot nematode, *Meloidogyne incognita*, in tomato with two *Trichoderma* species. *Pak. J. Zoo*. 50(4): 1589–1592. <https://doi.org/10.17582/journal.pjz/2018.50.4.sc15>
- Mulyadi. 2009. *Nematologi Pertanian*. Gadjah Mada University Press. Yogyakarta.
- Murthi, R.S., Lisnawita & Oemary, S., 2015. Potensi bakteri endofit dalam meningkatkan pertumbuhan tanaman tembakau yang terinfeksi nematoda puru akar (*Meloidogyne* spp.). *Agroekoteknologi*. 4(1): 1881–188
- Nafia, S.Z.I., Pujiyanto, S., & Budiharjo, A. 2021. Isolasi, skrining, dan identifikasi molekuler bakteri termotoleran proteolitik dari sumber air panas Nglimut Gonoharjo Kendal. *Bioma: Berkala Ilmiah Biologi*. 24(1): 30–35. <https://doi.org/10.14710/bioma.24.1.30-35>
- Nagata, R.T. 1980. Evaluation of different genes for resistance to root-knot nematode, *Meloidogyne incognita* in tomato. *Thesis*. University of Hawaii, Hawaii.
- Norris, J.R., Berkeley, R.W.C., Logan, N.A. & O'donnell, A.G. 1981. *The Genera Bacillus and Sporolactobacillus*. Springer -Verlag. New York. Pp. 1711–1742.
- Nurjayadi, M.Y., Munif, A., & Suastika, G. 2015. Identifikasi nematoda puru akar, *Meloidogyne graminicola*, pada tanaman padi di Jawa Barat. *Jurnal Fitopatologi Indonesia*. 11(4): 113–120. <https://doi.org/10.14692/jfi.11.4.113>
- Page, A.P., Stepek, G., Winter, A.D., & Pertab, D. 2014. Enzymology of the nematode



- cuticle: a potential drug target. *Int J Parasitol Drugs Drug Resist.* 4:133–141. <https://doi.org/10.1016/j.ijpddr.2014.05.003>
- Pal, A., & Chattopadhyay, A.P. 2012. Diversity and antimicrobial spectrum of endophytic bacteria isolat from *Peaderi foetida* L. *Int J Curr Pharm Res.* 4(3): 123-127.
- Press, C. M., Wilson, M., Tuzun, S., & Kloepper, J. W. (1997). Salicylic acid produced by *Serratia marcescens* 90-166 is not the primary determinant of induced systemic resistance in cucumber or tobacco. *Molecular Plant-Microbe Interactions*, 10(6), 761–768. <https://doi.org/10.1094/MPMI.1997.10.6.761>
- Rahayu, B.T.P., Widiyanto, R., Margino, D.S., & Mulyadi, M. 2009. Kemampuan Isolat aktinomisetes menghasilkan enzim yang dapat merusak kulit telur nematoda puru-akar *Meloidogyne* spp. *Jurnal Perlindungan Tanaman Indonesia.* 15(1): 22–28.
- Rahayuningtias, S., & Widayati, W. 2017. Kompilasi penyakit yang disebabkan oleh *Meloidogyne* spp. dengan jamur *Fusarium oxysporum* f. lycopersici PADA tanaman tomat. *Agritrop : Jurnal Ilmu-Ilmu Pertanian (Journal of Agricultural Science).* 14(2): 161–164. <https://doi.org/10.32528/agr.v14i2.430>
- Rahma, A.A., Suryanti, S.S., & Joko, T. 2020. Induced disease resistance and promotion of shallot growth by *Bacillus velezensis* B-27. *Pak. J. Biol. Sci.* 23(9): 1113-1121. DOI:[10.3923/pjbs.2020.1113.1121](https://doi.org/10.3923/pjbs.2020.1113.1121)
- Rani, P., Singh, M., Prashad, H., & Sharma, M. 2022. Evaluation of bacterial formulations as potential biocontrol agents against the southern root-knot nematode, *Meloidogyne incognita*. *Egyptian Journal of Biological Pest Control.* 32(1): 1–9. <https://doi.org/10.1186/s41938-022-00529-3>
- Rosmania & Yanti, F. 2020. Perhitungan jumlah bakteri di laboratorium mikrobiologi menggunakan pengembangan metode spektrofotometri. *Jurnal Penelitian Sains.* 22(2): 76–80.
- Sahara, B.S., & Nehra, V. 2011. Plant growth promoting rhizobacteria: a critical review. *Life Sci Med Res,* 21: 1–33.
- Salazar, W., & Guzmán, T. 2013. Efecto de poblaciones de *Meloidogyne* sp. en el desarrollo y rendimiento del tomate. *Agronomía Mesoamericana.* 24(2): 419–426. <https://www.redalyc.org/pdf/437/43729228018.pdf>
- Sasser, J.N., & Carter, C.C. 1982. Root-knot nematodes (*Meloidogyne* spp.): Identification, morphological and physiological variation, host range, ecology and control. *In: Nematology in the Southern Region of the United State.* R.D. Riggs (Ed.). South. Coop. Ser. Bull. Pp. 21–32.
- Sastrahidayat, L.K. 1990. Ilmu Penyakit Tanaman. Usaha Nasional. Bogor.
- Saxena, A. K., Kumar, M., Chakdar, H., Anuroopa, N., & Bagyaraj, D. J. 2020. *Bacillus* species in soil as a natural resource for plant health and nutrition. *Journal of Applied Microbiology.* 128(6): 1583-1594. <https://doi.org/10.1111/jam.14506>
- Schaad, N.W. 2001. Initial Identification of Common Genera. *In: Schaad NW, Jones JB, Chun W (eds) Laboratory Guide for Identification of Plant Pathogenic Bacteria.* APS Press, St. Paul.
- Semadi.* 1996. Pembudidayaan *Tomat* Hibrida. CV. Aneka. Solo.



- Shah, R., Amaesan, N., Patel, P., Jinal, H.N., & Krishnamurthy, R. 2020. Isolation and characterization of *Bacillus* spp. endowed with multifarious plant growth-promoting traits and their potential effect on tomato (*Lycopersicon esculentum*) seedlings. *Arabian Journal for Science and Engineering*. 45(1): 20-28.
- Sharma, I. P., Sharma, A. K., Prashad, L., & Rana, V. S. 2018. Natural bacterial cell-free extracts with powerful nematicidal activity on root-knot nematode. *Rhizosphere*. 5(1): 67–70. <https://doi.org/10.1016/j.rhisph.2018.01.003>
- Shurtleff, M.C., & Averre, C.W. 2000. Diagnosing plant diseases caused by nematodes. St Paul (MN). The American Phytopathological Society.
- Siddiqui, I. A., Shaukat, S. S., Sheikh, I. H., & Khan, A. 2006. Role of cyanide production by *Pseudomonas fluorescens* CHA0 in the suppression of root-knot nematode, *Meloidogyne javanica* in tomato. *World Journal of Microbiology and Biotechnology*. 22(6): 641–650. <https://doi.org/10.1007/s11274-005-9084-2>
- Silitonga, D.M., & Priyani, N. 2001. Isolasi dan uji potensi isolat bakteri pelarut fosfat dan bakteri penghasil hormon IAA (indole acetic acid) terhadap pertumbuhan kedelai (*Glycine max* L.) pada tanah. *Saintia Biologi*. 1(2): 35–41.
- Sivasakthi, S., Usharani, G., & Saranraj, P. 2014. Biocontrol potentiality of plant growth promoting bacteria (PGPR)-*Pseudomonas fluorescens* and *Bacillus subtilis*: A review. *African Journal of Agricultural Research*. 9(16): 1265–1277. <https://doi.org/10.5897/AJAR2013.7914>
- Soesanto, L. 2008. Pengantar Pengendalian Hayati Penyakit Tanaman. Raja Grafindo Persada. Depok.
- Soliman, G.M., Ameen, H.H., Abdel-Aziz, S.M. 2019. In vitro evaluation of some isolated bacteria against the plant parasite nematode *Meloidogyne incognita*. *Bull Natl Res*. 43(171): 1-7. <https://doi.org/10.1186/s42269-019-0200-0>
- State, O., & State, O. 2011. Antagonistic Effect of Indigenous *Bacillus subtilis* on Root- / Soil-borne Fungal Pathogens of Cowpea. 3(3): 11–18.
- Sumi, C. D., Yang, B. W., Yeo, I. C., & Hahm, Y. T. 2015. Antimicrobial peptides of the genus *Bacillus*: a new era for antibiotics. *Canadian Journal of Microbiology*. 61(2): 93-103. <https://doi.org/10.1139/cjm-2014-0613>
- Suzuki, R., Ueda, T., Wada, T., Ito, M., Ishida, T., & Sawa, S. 2021. Identification of genes involved in *Meloidogyne incognita*-induced gall formation processes in *Arabidopsis thaliana*. *Plant Biotechnol*. 38(1):1–8. <http://doi.org/10.5511/plantbiotechnology.20.0716a>
- Tanawy, E.A. 2009. Acquainting with salt tolerant endophytic bacteria isolated from rice. *Plant Grown*. 1(2): 72–79.
- Taylor, A.L. & Sasser, J.N. 1978. *Biologi, Identification and Control of Root Knot Nematodes (Meloidogyne spp)*. International Carolina Meloidogyne Project. Printed by Nor Carolina State University Graphics. Pp. 107.
- Tian, X.L., Zhao, X.M., Zhao, S.Y., Zhao, J.L., & Mao, Z.C. 2022. The biocontrol functions of *Bacillus velezensis* strain Bv-25 against *Meloidogyne incognita*. *Front Microbiol*. 7(13): 84–91. <https://doi.org/10.3389/fmicb.2022.843041>
- Tian, B., Yang, J., & Zhang, K. 2007. Bacteria used in the biological control of plant-parasitic nematodes: populations, mechanisms of action, and future prospects. *FEMS Microbiol Ecol*. 61: 197–213.



- Tiara, C.A., Rahmatina, F.D., Fajriandidi, R., & Maira, L. 2019. Sido-Char sebagai pembenah keracunan Fe pada tanah sawah. *Jurnal Tanah dan Sumberdaya Lahan*. 6(2): 1243–1250. <https://doi.org/10.21776/ub.jtsl.2019.006.2.5>
- Toyota, K. 2015. *Bacillus*-related spore formers : attractive agents for plant growth promotion. *Microbes Environ*. 30(3): 205–207. <https://doi.org/10.1264/jsme2.ME3003rh>
- Tran, T.P.H., Wang, S.L., Nguyen, V.B., Tran, D.M., Nguyen, D.S., & Nguyen, A.D. 2019. Study of novel endophytic bacteria for biocontrol of black pepper root-knot nematodes in the central highlands of Vietnam. *Agronomy*. 9(11): 714. <https://doi.org/10.3390/agronomy9110714>
- Ullah, U., Ashraf, M., Shahzad, S.M., Siddiqui, A.R., Piracha, M.A., & Suleman, M. 2016. Growth behavior of tomato (*Solanum lycopersicum* L.) under drought stress in the presence of silicon and plant growth promoting rhizobacteria. *Soil Environment*. 35(1): 65–7
- Viljoen, J.J.F., Labuschagne, N., Fourie, H., & Sikora, R.A. 2019. Biological control of the root-knot nematode *Meloidogyne incognita* on tomatoes and carrots by plant growth-promoting rhizobacteria. *Tropical Plant Pathology*. 44(3): 284–291. <https://doi.org/10.1007/s40858-019-00283-2>
- Wardhika, C.M., Suryanti, S., & Joko, T. 2014. Eksplorasi bakteri yang berpotensi sebagai agens pengendali hayati *Fusarium solani* dan *Meloidogyne incognita* pada lada. *Jurnal Perlindungan Tanaman Indonesia*. 18(2): 89-94.
- Widiyanto, D., Pramita, A. D., Kurniasari, I., Arofatullah, N. A., Prijambada, I. D., Widada, J., & Indarti, S. 2021. *Bacillus* is one of the most potential genus as a biocontrol agent of golden cyst nematode (*Globodera rostochiensis*). *Archives of Phytopathology and Plant Protection*. 54(19–20): 2191–2205. <https://doi.org/10.1080/03235408.2021.1925501>
- Wulandari, D.R., Sudana, I.M., & Singarsa, I.D.P. 2019. Tingkat Fekunditas Nematoda (*Meloidogyne* spp.) pada Beberapa Tanaman yang Tergolong Familia Solanaceae. *Jurnal Agroekoteknologi Tropika*. 8(4): 468–477.
- Xiang, N., Lawrence, K.S., Kloepper, J.W., Donald, P.A., & Mcinroy, J.A. 2017. Biological control of *Meloidogyne incognita* by spore-forming plant growth-promoting rhizobacteria on cotton. *Plant Disease*. 101(5): 774–784. <http://dx.doi.org/10.1094/PDIS-09-16-1369-RE>
- Yang, J., Liang, L., Li, J., & Zhang, K.Q. 2013. Nematicidal enzymes from microorganisms and their applications. *Applied Microbiology and Biotechnology*. 97: 7081–7095. <https://doi.org/10.1007/s00253-013-5045-0>
- Zeck, W.M. 1971. Ein Bonitierungs-schema zur Felddauswertung von Wurzelgallenbefall. *Pflanzenschutz-Nachrichten Bayer*. 24(1): 144–147.
- Zhang, W., Jiang, F., & Ou, J. 2011. Global pesticide consumption and pollution: with China as a focus. *Proceedings of the International Academy of Ecology and Environmental Sciences*. 1(2): 125–144.