

DAFTAR PUSTAKA

- Abdallah, R. A. B., Mejdoub-Trabelsi, B., Nefzi, A., Jabnoun-Khiareddine, H., and Daami-Remadi, M. 2016. Isolation of Endophytic Bacteria from *Withania Somnifera* and Assessment of Their Ability to Suppress *Fusarium wilt* Disease in Tomato and to Promote Plant Growth. *Journal of Plant Pathology & Microbiology*. 7(5): 1-11. <https://doi.org/10.4172/2157-7471.1000352>.
- Abo-Elyousr, K. A. M., Khalil Bagy, H. M. M., Hashem, M., Alamri, S. A. M., and Mostafa, Y. S. 2019. Biological control of The Tomato wilt Caused by *Clavibacter michiganensis* subsp. *michiganensis* Using Formulated Plant Growth-Promoting Bacteria. *Egyptian Journal of Biological Pest Control*. 29(1): 29–54. <https://doi.org/10.1186/s41938-019-0152-6>.
- Achari, G. A. and Ramesh, R. 2014. Diversity, Biocontrol, and Plant Growth Promoting Abilities of Xylem Residing Bacteria from *Solanaceous crops*. *International Journal of Microbiology*. 15. <https://doi.org/10.1155/2014/296521>.
- Aditya, R. H., Wahyuni, W. S. dan Mihardjo, P. A. 2015. Ketahanan Lapangan Lima Genotipe Padi Terhadap Penyakit Hawar Daun Bakteri. *Jurnal Fitopatologi Indonesia*. 11(5): 159–165. <https://doi.org/10.14692/jfi.11.5.159>.
- Afzal, I., Shinwari, Z. K., Sikandar, S. and Shahzad, S. 2019. Plant Beneficial Endophytic Bacteria: Mechanisms, Diversity, Host Range and Genetic Determinants. *Microbiological Research*. 221: 36–49. <https://doi.org/10.1016/j.micres.2019.02.001>.
- Agustiansyah, Ilyas, S., Sudarsono, dan Machmud, M. 2013. Karakterisasi Rizobakteri yang Berpotensi Mengendalikan Bakteri *Xanthomonas oryzae* pv. *oryzae* dan Meningkatkan Pertumbuhan Tanaman Padi. *J. HPT Tropika*. 13(1): 42–51.
- Agustiansyah, Ilyas, S., Sudarsono, dan MachmudIlyas, M. 2010. Pengaruh Perlakuan Benih Secara Hayati pada Benih Padi Terinfeksi *Xanthomonas oryzae* pv. *oryzae* Terhadap Mutu Benih dan Pertumbuhan Bibit. *Jurnal Agron. Indonesia*. 38(3): 185–191.

- Ahemad, M. and Khan, M. S. 2012. Effect of Fungicides on Plant Growth Promoting Activities of Phosphate Solubilizing *Pseudomonas putida* Isolated from Mustard (*Brassica campestris*) Rhizosphere. *Chemosphere*. 86(9): 945–950. <https://doi.org/10.1016/j.chemosphere.2011.11.013>
- Ahmed, E. and Holmström, S. J. M. 2014. Siderophores in Environmental Research: Roles and Applications. *Microbial Biotechnology*. 7: 196–208. <https://doi.org/10.1111/1751-7915.12117>.
- Akbaba, M., and Ozaktan, H. 2018. Biocontrol of Angular Leaf Spot Disease and Colonization of Cucumber (*Cucumis sativus* L.) by Endophytic Bacteria. *Egyptian Journal of Biological Pest Control*. 28(14): 1–10. <https://doi.org/10.1186/s41938-017-0020-1>.
- Alfiah, L. N., Zul, D. dan Nelvia. 2016. Pengaruh Inokulasi Campuran Isolat Bakteri Pelarut Fosfat Indigenus Riau Terhadap Pertumbuhan dan Produksi Tanaman Kedelai (*Glycine max* L. Merr), *Jurnal Agroteknologi*. 7(1): 7–14. Retrieved from <http://ejournal.uin-suska.ac.id/index.php/agroteknologi/article/download/2243/1454>.
- Amaria, W., Kasim, N. N. dan Munif, A. 2019. Kelimpahan Populasi Bakteri Filosfer, Rizosfer, dan Endofit Tanaman Kemiri Sunan (*Reutealis trisperma*(Blanco) airy saw), serta Potensinya sebagai Agens Biokontrol. *Journal TABARO*. 3(1): 305–317.
- Amoo, A. E. and Babalola, O. O. 2017. Ammonia-oxidizing Microorganisms: Key Players in The Promotion of Plant Growth. *Journal of Soil Science and Plant Nutrition*. 17(4): 935–947.
- Antonius, S., Agustyani, D., Imamuddin, H., Dewi, T. K. dan Laili, N. 2014. Kajian Penghasil Hormon Tumbuh IAA sebagai Pupuk Organik Hayati dan Kandungan IAA Selama Penyimpanan. *Prosiding Seminar Nasional Pertanian Organik*. 279–285.
- Aqlinia, M., Pujiyanto, S. dan Wijanarka. 2020. Isolasi Bakteri Endofit Bangle (*Zingiber Cassumunar* Roxb.) dan Uji Antibakteri Supernatan Crude Metabolit Sekunder Isolat Potensial Terhadap *Staphylococcus aureus*. *Jurnal Akademika Biologi*, 9(1), 23–31. Retrieved from <https://ejournal3.undip.ac.id/index.php/biologi/article/view/27742>.
- Arfaoui, A., Adam, L. R., Bezzahou, A. and Daayf, F. 2018. Isolation and Identification of Cultivated Bacteria Associated With Soybeans and Their Biocontrol Activity Against *Phytophthora sojae*. *BioControl*. 63(4): 607–617. <https://doi.org/10.1007/s10526-018-9873-9>.

- Arfarita, N., Lestari, M. W., Murwani, I. and Higuchi, T. 2017. Isolation of Indigenous Phosphate Solubilizing Bacteria from Green Bean Rhizospheres. *Journal of Degraded and Mining Lands Management.* 4(3): 845–851. <https://doi.org/10.15243/jdmlm.2017.043.845>
- Ariyanto, E. F., Abadi, A. L. dan Djauhari, S. 2013. Keanekaragaman Jamur Endofit pada Daun Tanaman Padi (*Oryza sativa L.*) dengan Sistem Pengelolaan Hama Terpadu (PHT) dan konvensional di desa Bayem kecamatan Kasembon, kabupaten malang. *Jurnal HPT*, 1(2), 37–51.
- Asnawi, Iswati, R. dan Motulo, H. F. J. 2012. Eksplotasi Agens Biokontrol Penyebab Penyakit Gugur Buah Kelapa. *JJAT*. 1(2): 61–66.
- Asra, R., Samarlina, R. A. dan Silalahi, M. 2020. *Hormon Tumbuhan*. UKI Press. Jakarta
- Asrul, A. dan Aryantha, I. N. P. 2020. Isolasi dan Identifikasi Bakteri Pelarut Fosfat dari Tanah Rhizosfer Kelapa Sawit (*Elaeis guineensis*). *Lumbung.* 19(1): 30–39. <https://doi.org/10.32530/lumbung.v19i1.204>
- Astriani, M., Zubaidah, S., Abadi, A. L. and Suarsini, E. 2020. *Pseudomonas Plecoglossicida* As a Novel Bacterium for Phosphate Solubilizing and Indole-3-acetic Acid-producing from Soybean Rhizospheric Soils of East Java, Indonesia. *Biodiversitas*. 21(2): 578–586. <https://doi.org/10.13057/biodiv/d210220>
- Astuti, Y. W., Widodo, L. U. dan Budisantosa, I. 2013. Pengaruh Bakteri Pelarut Fosfat dan Bakteri Penambat Nitrogen Terhadap Pertumbuhan Tanaman Tomat pada Tanah Masam. *UNJ. Purwokerto*. 1(23): 1–9.
- Atekan, Nuraini, Y., Handayanto, E. and Syekhfani. 2014. The Potential of Phosphate Solubilizing Bacteria Isolated from Sugarcane Wastes for Solubilizing Phosphate. *Journal of Degraded and Mining Lands Management.* 1(4): 175–182. <https://doi.org/10.15243/jdmlm.2014.014.175>.
- Ayangbenro, A. S. and Babalola, O. O. 2017. A New Strategy for Heavy Metal Polluted Environments: A Review of Microbial Biosorbents. *International Journal of Environmental Research and Public Health*. 14(1): 16. <https://doi.org/10.3390/ijerph14010094>.

- Babu, R. M., Sajeena, A., Samundeeswari, A. V, Sreedhar, A., Vidhyasekeran, P. and Reddy, M. S. 2003. Induction of Bacterial Blight (*Xanthomonas oryzae* pv. *oryzae*) Resistance In Rice By Treatment With Acibenzolar-S-Methyl. *Annals of Applied Biology*. 143(3): 333–340. <https://doi.org/10.1111/j.1744-7348.2003.tb00302.x>.
- Baby, V., Rajakumar, S. and Ayyasamy, P. M. 2013. Reduction of Ferric Iron in Synthetic Medium Amended With Acetate As a Sole Carbon Source. *International Journal of Current Microbiology and Applied Sciences*. 2(12): 501–513.
- Backer, R., Rokem, J. S., Ilangumaran, G., Lamont, J., Praslickova, D., Ricci, E., Subramanian, S. and Smith, D. L. 2018. Plant Growth-Promoting Rhizobacteria: Context, Mechanisms of Action, and Roadmap to Commercialization of Biostimulants for Sustainable Agriculture. *Frontiers in Plant Science*. 9: 1–17. <https://doi.org/10.3389/fpls.2018.01473>
- Balosi, F., Lakani, I. dan Panggeso, J. 2014. Eksplorasi Bakteri Endofit sebagai Agens Pengendalian Hayati Terhadap Penyakit Darah pada Tanaman Pisang Secara In-vitro. *E-J. Agrotekbis*. 2(6): 579–586.
- Barrera, S. E., Sarango-Flores, S. W. and Montenegro-Gomez, S. P. 2020. The Phyllosphere Microbiome and Its Potential Application in Horticultural Crops. A Review. *Revista Colombiana de Ciencias Hortícolas*. 13(3): 19.
- Bashan, Y. and De-Bashan, L. E. 2005. Plant Growth Promoting, Encyclopedia of soils in The Environment. 1: 103–115.
- Beneduzi, A., Ambrosini, A. and Passaglia, L. M. P. 2012. Plant Growth-Promoting Rhizobacteria (PGPR): Their Potential as Antagonists and Biocontrol Agents. *Genetics and Molecular Biology*. 35(4): 1044–1051.
- Bhattacharyya, P. N. and Jha, D. K. 2012. Plant Growth-Promoting Rhizobacteria (PGPR): Emergence in Agriculture. *World Journal of Microbiology and Biotechnology*. 28(4): 1327–1350. <https://doi.org/10.1007/s11274-011-0979-9>.

- Bhore, S. J., Nithya, R. and Loh, C. Y. 2010. Screening of Endophytic Bacteria Isolated From Leaves of Sambung Nyawa [*Gynura procumbens* (Lour.) Merr.] for Cytokinin-like Compounds. *Bioinformation*. 5(5): 191–197. <https://doi.org/10.6026/97320630005191>
- Bhore, S. J. and Sathisha, G. 2010. Screening of Endophytic Colonizing Bacteria for Cytokinin-Like Compounds: Crude Cell-Free Broth of Endophytic Colonizing Bacteria is Unsuitable in Cucumber Cotyledon Bioassay. *World Journal of Agricultural Sciences*. 6(4): 345–352.
- Bonnet, M., Lagier, J. C., Raoult, D. and Khelaifia, S. 2019. Bacterial Culture Through Selective and Non-Selective Conditions: The Evolution of Culture Media in Clinical Microbiology. *Journal Pre-Proof*. 29. <https://doi.org/10.1016/j.nmni.2019.100622>
- Borrow, A., Brian, P. W., Chester, V. E., Curtis, P. J., Hemming, H. G., Henehan, C., Jeffreys, E. G. Lloyd, P. B., Nixon, I. S., Norris, G. L.F. and Radley, M. 1955. Gibberellic Acid, a Metabolic Product of The Fungus Gibberella Fujikuroi: Some Observations on Its Production and Isolation. *Journal of the Science of Food and Agriculture*. 6(6): 340–348. <https://doi.org/10.1002/jsfa.2740060609>.
- [BPS] Badan Pusat Statistik. 2016. *Potret awal pembangunan pasca pasca MDGs, sustainable development goals (SDGs)*. <https://www.bps.go.id/publication/2016/02/11/06122673c51bcc32340391ce/kajian-indikator-lintas-sektor--potret-awal-pembangunan-pasca-mdgs--sustainable-development-goals--sdgs-.html>. Diakses tanggal 19 September 2020.
- Badan Pusat Statistik. 2018. *Luas panen dan produksi beras di Indonesia 2018*. <https://www.bps.go.id/publication/2018/12/21/543c607a9ce62960d929060f/luas-panen-dan-produksi-beras-di-indonesia-2018-hasil-kegiatan-pendataan-statistik-pertanian-tanaman-pangan-terintegrasi-dengan-metode-kerangka-sampel-area-.html>. Diakses tanggal 19 September 2020.
- Budi, I. S., Mariana, dan Fachruzi, I. 2011. Formulasi Biopestisida Berbahan Aktif Jamur untuk Pengendalian Penyakit Busuk Pangkal Batang Padi (*Rhizoctonia solani*). *Seminar Nasional Pestisida Nabati IV*. 71–82.

- Cahyani, C. N., Nuraini, Y., dan Pratomo, A. G. 2018. Potensi Pemanfaatan Plant Growth Promoting Rhizobacteria (PGPR) dan Berbagai Media Tanam Terhadap Populasi Mikroba Tanah Serta Pertumbuhan dan Produksi Kentang. *Jurnal Tanah Dan Sumber Daya Lahan*. 5(2): 887–899.
- Cahyani T., A., Putrayani, M. I., Hasrullah, Ersyan, M., Aulia S., T., dan Jaya, A. M. 2017. Teknologi Formulasi Rhizobakteria Berbasis Bahan Lokal dalam Menunjang Bioindustri Pertanian Berkelanjutan. *Hasanuddin Student Journal*. 1(1): 16–21. Retrieved from <http://journal.unhas.ac.id/index.php/jt/>
- Cappellari, L. R., Santoro, M. V., Nievas, F., Giordano, W., dan Banchio, E. 2013. Increase of Secondary Metabolite Content in Marigold by Inoculation With Plant Growth-Promoting Rhizobacteria. *Applied Soil Ecology*. 70: 16–22. <https://doi.org/10.1016/j.apsoil.2013.04.001>
- Cappuccino, J. G. and Sherman, N. 2001. *Microbiology a laboratory manual*. Fifth Edition. Benjamin/Cummings Science Publishing. California.
- Castillo, U. F., Strobel, G. A., Ford, E. J., Hess, W. M., Porter, H., Jensen, J. B., Albert, H., Robinson, R., Condon, M. A. M., Teplow, D. B., Stevens, D. and Yaver, D. 2002. Munumbicins, Wide-Spectrum Antibiotics Produced by *Streptomyces* NRRL 30562, Endophytic on *Kennedia nigriscans*. *Microbiology*. 148(9): 2675–2685. <https://doi.org/10.1099/00221287-148-9-2675>
- Cazorla, F. M., Romero, D., Pérez-García, A., Lugtenberg, B. J. J., Vicente, A. De, and Bloemberg, G. 2007. Isolation and Characterization of Antagonistic *Bacillus subtilis* Strains From The Avocado Rhizoplane Displaying Biocontrol Activity. *Journal of Applied Microbiology*. 103(5): 1950–1959. <https://doi.org/10.1111/j.1365-2672.2007.03433.x>.
- Chandler, R. F. 1979. *Rice in the Tropics: A Guide to the Development of National Programs*. Westview Press/Boulder. Colorado.
- Chandra, T. J. and Mani, P. S. 2011. A Study of 2 Rapid Tests to Differentiate Gram Positive and Gram Negative Aerobic Bacteria. *Journal of Medical and Allied Sciences*. 1(2): 84–85.

- Chibuegwu, O. J. and Nmesoma, E. H. 2011. Batch Culture Studies of Phosphate Solubilisation by *Micrococcus* sp PSB 7 Isolated from Rhizospheric Soil. *American-Eurasian J. Agric. & Environ. Sci.* 10(4): 667–674.
- Chojnacka, K. 2010. Biosorption and Bioaccumulation – the Prospects for Practical Applications. *Environment International*. 36(3): 299–307. <https://doi.org/10.1016/j.envint.2009.12.001>.
- Choliq, F. A., Martosudiro, M., dan Jalaweni, S. C. 2016. Aplikasi Plant Growth Promoting Rhizobacteria (pgpr) Terhadap Infeksi *Chrysanthemum mild mottle virus* (CMMV), Pertumbuhan, dan Produksi Tanaman Krisan (*Chrysanthemum sp.*). *Agroradix*. 3(2): 31-49.
- Complant, S., Clément, C., and Sessitsch, A. 2010. Plant Growth-Promoting Bacteria in the Rhizo- and Endosphere of Plants: Their Role, Colonization, Mechanisms Involved and Prospects for Utilization. *Soil Biology and Biochemistry*. 42(5): 669–678. <https://doi.org/10.1016/j.soilbio.2009.11.024>
- Complant, S., Duffy, B., Nowak, J., Christophe, C., and Barka, E. A. (2005). Use of Plant Growth-Promoting Bacteria for Biocontrol of Plant Diseases: Principles, Mechanisms of Action, and Future Prospects. *Applied and Environmental Microbiology*. 71(9): 4950–4959. <https://doi.org/10.1128/AEM.71.9.4951>.
- Cordero-Lara, K. I. 2020. Temperate Japonica Rice (*Oryza sativa* L.) Breeding: History, Present and Future Challenges. *Chilean Journal of Agricultural Research*, 80(2), 303–314. <https://doi.org/10.4067/S0718-58392020000200303>.
- Damanik, S., Pinem, M. I., and Pangestiningsih, Y. 2013. Uji Efikasi Agens Hayati Terhadap Penyakit Hawar Daun Bakteri (*Xanthomonas oryzae* pv. *oryzae*) pada Beberapa Varietas Padi Sawah (*Oryza sativa*). *Jurnal Agroekoteknologi*. 1(4): 1402–14012. <https://doi.org/10.2298/JAS1203135V>.
- David, B. V., Chandrasehar, G. and Selvam, P. N. 2018. *Pseudomonas fluorescens: A Plant-Growth-Promoting Rhizobacterium (PGPR) with Potential Role in Biocontrol of Pests of Crops*. New and Future Developments in Microbial Biotechnology and Bioengineering: Crop Improvement through Microbial Biotechnology. Elsevier B.V. <https://doi.org/10.1016/B978-0-444-63987-5.00010-4>.

- De Carvalho, C. C. C. R. and Caramujo, M. J. 2018. The Various Roles of Fatty Acids. *Molecules*. 23(10): 36. <https://doi.org/10.3390/molecules23102583>
- Desmina, M., Ekyastuti, W. dan Ekamawanti, H. A. 2019. Karakteristik Dasar Populasi Bakteri Penmbat Nitrogen Non-Simbiotik pada Lahan Gambut Bekas Kebakaran. *Jurnal Hutan Lestari*. 7(3): 1361–1366.
- Desriani, D., Safira, U. M., Bintang, M., Rivai, A. dan Lisdiyanti, P. 2014. Isolasi dan Karakterisasi Bakteri Endofit dari Tanaman Binahong dan Katepeng China. *Jurnal Kesehatan Andalas*. 3(2): 89–93. <https://doi.org/10.25077/jka.v3i2.33>.
- Dewi, E. R. dan Whitbread, A. M. 2017. Use of Climate Forecast Information to Manage Lowland Rice-Based Cropping Systems in Jakenan, Central Java, Indonesia. *Asian Journal of Agricultural Research*. 11(3): 66–77. <https://doi.org/10.3923/ajar.2017.66.77>.
- Dewi, T. K., Arum, E. S., Imamuddin, H. dan Antonius, S. 2015. Karakterisasi Mikroba Perakaran (PGPR) Agen Penting Pendukung Pupuk Organik Hayati. *Pros Sem Nas Masy Biodiv Indon*. 1(2): 289–295. <https://doi.org/10.13057/psnmbi/m010220>.
- Direktorat Pupuk dan Pestisida. 2016. *Pestisida Pertanian dan Kehutanan Tahun 2016*. Direktorat Jenderal Prasarana dan Sarana Pertanian. Kementerian Pertanian Republik Indonesia. Jakarta.
- Djedatin, G., Ndjiondjop, M. N., Sanni, A., Lorieux, M., Verdier, V. and Ghesquiere, A. (2016). Identification of Novel Major and Minor QTLs Associated with *Xanthomonas oryzae* pv. *oryzae* (African Strains) Resistance in Rice (*Oryza sativa* L.). *Rice*. 9(18): 10. <https://doi.org/10.1186/s12284-016-0090-9>
- Dunand, R. and Saichuk, J. 2005. *Rice growth and development*. California Rice Production Workshop.
- Eris, D. D., Munif, A., Soekarno, B. dan Purwantara, A. 2017. Penapisan dan Potensi Bakteri Endofit Asal Tanaman Arecaceae sebagai Agens Pengendali Hayati Cendawan *Pestalotiopsis* sp. Penyebab Penyakit Bercak Daun pada Kelapa Kopyor (*Cocos nucifera*). *Menara Perkebunan*. 85(1): 19–27.
- Estiningtyas, W. dan Syakir, M. 2017. Pengaruh Perubahan Iklim Terhadap Produksi Padi di Lahan Tadah Hujan. *Jurnal Meteorologi dan Geofisika*. 18(2): 83–93.

- Fadiji, A. E. and Babalola, O. O. 2020. Exploring the Potentialities of Beneficial Endophytes for Improved Plant Growth. *Saudi Journal of Biological Sciences.* 44. <https://doi.org/10.1016/j.sjbs.2020.08.002>
- Fatimah, F. dan Prasetyono, J. 2020. Pemanfaatan Piramida Gen Ketahanan Terhadap Penyakit Hawar Daun Bakteri dalam Mendukung Perakitan Varietas Unggul Padi. *Jurnal Penelitian dan Pengembangan Pertanian.* 39(1): 11–20. <https://doi.org/10.21082/jp3.v39n1.2020.p11-20>
- Ferreira, C. M. H., Soares, H. M. V. M. and Soares, E. V. 2019. Promising Bacterial Genera for Agricultural Practices : An Insight on Plant Growth-Promoting Properties and Microbial Safety Aspects. *Science of the Total Environment.* 682: 779–799. <https://doi.org/10.1016/j.scitotenv.2019.04.225>.
- Fgaier, H. and Eberl, H. J. 2011. Antagonistic Control of Microbial Pathogens Under Iron Limitations by Siderophore Producing Bacteria in A Chemostat Setup. *Journal of Theoretical Biology.* 273(1): 103–114. <https://doi.org/10.1016/j.jtbi.2010.12.034>.
- Fravel, D. R. 2005. Commercialization and Implementation of Biocontrol. *Annual Review of Phytopathology.* 43: 337–359. <https://doi.org/10.1146/annurev.phyto.43.032904.092924>.
- Fukuoka, M. (2012). *Revolusi sebatang jerami.* Yayasan Obor Indonesia, Jakarta. <http://dx.doi.org/10.1016/j.appdev.2016>.
- Guan, S. H., Sattler, I., Lin, W. H., Guo, D. A. and Grabley, S. 2005. p-Aminoacetophenonic Acids Produced by A Mangrove Endophyte: *Streptomyces griseus* subsp. *Journal of Natural Products.* 68(8): 1198–1200. <https://doi.org/10.1021/np0500777>.
- Gupta, G., Panwar, J., Akhtar, M. S., and Jha, P. N. 2012. *Endophytic nitrogen-fixing bacteria as biofertilizer.* Department of Biological Sciences, Birla Institute of Technology and Science. Rajasthan, India. <https://doi.org/10.1007/978-94-007-5449-2>.
- Gutierrez, C. K., Matsui, G. Y., Lincoln, D. E. and Lovell, C. R. 2009. Production of the Phytohormone Indole-3-Acetic Acid by Estuarine Species of the Genus *Vibrio.* *Applied and Environmental Microbiology.* 75(8): 2253–2258. <https://doi.org/10.1128/AEM.02072-08>.

- Guyasa, I. M., Sadimantara, G. R., Khaeruni, A. and Sutariati, G. A. K. 2018. Isolation of *Bacillus spp* and *Pseudomonas fluorescens* from Upland Rice Rhizosphere and Its Potential as Plant Growth Promoting Rhizobacteria for Local Upland Rice (*Oryza sativa L.*). *Bioscience Research*. 15(4): 3231–3239.
- Hadianto, W., Hakim, L. dan Bakhtiar. 2015. Ketahanan Beberapa Genotipe Padi Terhadap Penyakit Hawar Daun Bakteri (*Xanthomonas oryzae* pv. *oryzae*). *Jurnal HPT Tropika*. 15(2): 152–163.
- Hallmann, J., Quadt-Hallmann, A., Mahaffee, W. F. and Kloepper, J. W. 1997. Bacterial Endophytes in Agricultural Crops. *Can. J. Microbiol.* 43: 895–914.
- Hanafi, A., Purwantisari, S. dan Raharjo, B. 2017. Uji Potensi Bakteri Endofit Kitinolitik Tanaman Padi (*Oryza sativa L.*) sebagai Penghasil Hormon IAA (Indole Acetic Acid). *Bioma : Berkala Ilmiah Biologi*. 19(1): 76–82. <https://doi.org/10.14710/bioma.19.1.76-82>.
- Hanudin, Budiarto, K. dan Marwoto, B. 2018. Potensi Beberapa Mikroba Pemacu Pertumbuhan Tanaman sebagai Bahan Aktif Pupuk dan Pestisida Hayati. *Jurnal Penelitian dan Pengembangan Pertanian*. 37(2): 59–70. <https://doi.org/10.21082/jp3.v37n2.2018.p59-70>.
- Hanum, R., Bakhtiar, dan Hakim, L. 2016. Pertumbuhan, Hasil dan Ketahanan Enam Varietas Padi (*Oryza sativa L.*) Terhadap Penyakit Hawar Daun Bakteri (*Xanthomonas oryzae* pv *oryzae*). *Jurnal Ilmiah Mahasiswa Pertanian Unsyiah*. 1(1): 138–146.
- Harni, R. dan Ibrahim, M. S. D. 2011. Potensi Bakteri Endofit Menginduksi Ketahanan Tanaman Lada Terhadap Infeksi *Meloidogyne incognita*. *Jurnal Penelitian Tanaman Industri*. 17(3): 118–123. <https://doi.org/10.21082/jlitri.v17n3.2011.118-123>.
- Hartono, and Jumadi, O. (2014). Selection and Characterization of Non Symbiotic Nitrogen-Fixing Bacteria Excreting Ammonium on Corn Land (*Zea mays L.*) and Rice (*Oryza sativa L.*) Origin Barru, South Sulawesi, Indonesia. *Jurnal Sainsmat*. III(2): 143–153.
- Hasanuddin. 2011. Uji Aktivitas Antibiosis *Pseudomonas pendarflour* Terhadap *Rigidoporus lignosus* (Klotsch) Imazeki Penyebab Penyakit Akar Putih. *Jurnal Hama dan Penyakit Tumbuhan Tropika*. 11(1): 87–94. <https://doi.org/10.23960/j.hptt.11187-94>.

- Hastuti, R. D., Lestari, Y., Saraswati, R. and Suwanto, A. 2012. Capability of *Streptomyces* spp. In Controlling Bacterial Leaf Blight Disease in Rice Plants. *American Journal of Agricultural and Biological Sciences.* 7(2): 217–223.
- Hatta, M. 2012. Uji Jarak Tanam Sistem Legowo Terhadap Pertumbuhan dan Hasil Beberapa Varietas Padi pada Metode Sri. *Jurnal Agrista.* 16(2): 87–93. <http://jurnal.unsyiah.ac.id/agrista/article/view/291>.
- Helmiyati, A. F. dan Nurrahman. 2010. Pengaruh Kosentrasi Tawas Terhadap Pertumbuhan Bakteri Gram Positif dan Negatif. *Jurnal Pangan dan Gizi.* 1(1): 1–6.
- Herlina, L., Pukan, K. K. dan Mustikaningtyas, D. 2016. Kajian Bakteri Endofit Penghasil IAA (Indole Acetic Acid) untuk Pertumbuhan Tanaman. *Sainteknol.* 14(1): 51–58.
- Herlina, L. dan Silitonga, T. S. 2011. Seleksi Lapang Ketahanan Beberapa Varietas Padi Terhadap Infeksi Hawar Daun Bakteri Strain IV dan VIII. *Buletin Plasma Nutfah.* 17(2): 80–87.
- Hernández, A. F., Parrón, T., Tsatsakis, A. M., Requena, M., Alarcón, R. and López-Guarnido, O. 2013. Toxic Effects of Pesticide Mixtures at a Molecular Level: Their Relevance to Human Health. *Toxicology.* 307: 136–145. <https://doi.org/10.1016/j.tox.2012.06.009>
- Hernawan, E. dan Meylani, V. 2016. Analisis Karakteristik Fisikokimia Beras Putih, Beras Merah, dan Beras Hitam (*Oryza sativa* L., *Oryza nivara* dan *Oryza sativa* L. *indica*). *Jurnal Kesehatan Bakti Tunas Husada.* 15(1): 79–91. <https://doi.org/10.36465/jkbth.v15i1.154>.
- Hikmah, Z. M. dan Pratiwi, G. R. 2019. Pengaruh Pola Jarak Tanam dan Umur Bibit Terhadap Pertumbuhan dan Hasil Gabah Padi Sawah Irigasi Effect of Plant Spacing Pattern and Seedling Age on the Growth and Grain Yield of Irrigated Rice. *Penelitian Pertanian Tanaman Pangan.* 3(2): 75–81.
- Hoa, P. T. P., Quang, N. D., Sakiyama, Y., Hop, D. V., Hang, D. T., Ha, T. H., Van, N. T., Quy, N. T. K. and Dao, N. T. A. 2012. Screening for Actinomycetes Isolated from Soil With The Ability To Inhibit *Xanthomonas oryzae* pv. *oryzae* Causing Rice Bacterial Blight Disease in Vietnam. *African Journal of Biotechnology.* 11(80): 14586–14594. <https://doi.org/10.5897/ajb12.1544>.

- Hossain, M. and Fischer, K. S. 1995. Rice Research for Food Security and Sustainable Agricultural Development in Asia : Achievements and Future Challenges. *GeoJournal*. 35(3): 286–298.
- Hu, Q. and Xu, J. 2011. A Simple Double-Layered Chrome Azurol S Agar (SD- CASA) Plate Assay to Optimize the Production of Siderophores by a Potential Biocontrol Agent *Bacillus*. *African Journal of Microbiology Research*. 5(25): 4321–4327. <https://doi.org/10.5897/AJMR11.238>.
- Hussain, T., Roohi, A., Munir, S., Ahmed, I., Khan, J., Edel Hermann, V., Kim, K. Y. and Anees, M. 2013. Biochemical Characterization and Identification of Bacterial Strains Isolated from Drinking Water Sources of Kohat, Pakistan. *African Journal of Microbiology Research*. 7(16): 1579–1590. <https://doi.org/10.5897/ajmr12.2204>.
- Hyakumachi, M., Takahashi, H., Matsubara, Y., Someya, N., Shimizu, M., Kobayashi, K. and Nishiguchi, M. 2014). Recent Studies on Biological Control of Plant Diseases in Japan. *Journal of General Plant Patholog*. 80(4): 287–302. <https://doi.org/10.1007/s10327-014-0524-4>.
- Ikhwani, Pratiwi, G. R., Paturrohman, E. dan Makarim, A. K. 2013. Peningkatan Produktivitas Padi Melalui Penerapan Jarak Tanam Jajar Legowo. *Iptek Tanaman Pangan*. 8(2): 72–79.
- Iqlima, D., Ardiningsih, P. dan Wibowo, M. A. 2017. Aktivitas Antibakteri Isolat Bakteri Endofit B2D dari Batang Tanaman Yakon (*Smallanthus sonchifolius* (poepp. & endl.) H. rob Terhadap Bakteri *Staphylococcus aureus* dan *Salmonella thipimurium*. *JKK*. 7(1): 36–43.
- [IRRI]. International Rice Research Institute. 1996. Standard Evaluation System of Rice (SES). 4th Edition. IRRI. The Philippines.
- Ismail, N., Taulu, L. A. dan Bahtiar. 2011. Potensi *Corynebacterium* sebagai Pengendali Penyakit Hawar Daun Bakteri pada Tanaman Padi. *Seminar Nasional Serelia 2011*. 459–465.
- Iwata, K., Azlan, A., Yamakawa, H. and Omori, T. 2010. Ammonia Accumulation in Culture Broth by the Novel Nitrogen-Fixing Bacterium, *Lysobacter* sp. E4. *Journal of Bioscience and Bioengineering*. 110(4): 415–418. <https://doi.org/10.1016/j.jbiosc.2010.05.006>.

- Iwata, K., Yu, S. S., Azlan, N. N. A. and Omori, T. 2012. *Ammonia Accumulation of Novel Nitrogen-Fixing Bacteria*. Biotechnology-Molecular Studies and Novel Applications for Improved Quality of Human Life. InTech Janeza Trdine: Croatia.
- Jacoby, R., Peukert, M., Succurro, A., Koprivova, A. and Kopriva, S. 2017. The Role of Soil Microorganisms in Plant Mineral Nutrition-Current Knowledge and Future Directions. *Frontiers in Plant Science*. 8: 19. <https://doi.org/10.3389/fpls.2017.01617>.
- Jawetz, Melnick, and Adelberg's. 2013. *Medical Microbiology*. Mc Graw Hill Med. 26th ed. The McGraw-Hill Companies: United States. <https://doi.org/DOI: 10.1016/B978-0-323-40181-4.00114-6>.
- Ji, G. H., Wei, L. F., He, Y. Q., Wu, Y. P. and Bai, X. H. 2008. Biological Control of Rice Bacterial Blight by *Lysobacter antibioticus* Strain 13-1. *Biological Control*. 45(3): 288–296. <https://doi.org/10.1016/j.bioccontrol.2008.01.004>.
- Ji, S. H., Gururani, M. A. and Chun, S.C. 2013. Isolation and Characterization of Plant Growth Promoting Endophytic Diazotrophic Bacteria from Korean Rice Cultivars. *Microbiological Research*. 169(1): 83-98. <https://doi.org/10.1016/j.micres.2013.06.003>.
- Jiang, N., Yan, J., Liang, Y., Shi, Y., He, Z., Wu, Y., Zeng, Q., Liu, X. and Peng, J. 2020. Resistance Genes and Their Interactions with Bacterial Blight/leaf Streak Pathogens (*Xanthomonas oryzae*) in Rice (*Oryza sativa* L.)-an Updated Review. *Rice*. 13(3): 12. <https://doi.org/10.1186/s12284-019-0358-y>.
- Jonit, N. Q., Low, Y. C. and Tan, G. H. 2016). *Xanthomonas oryzae* pv. *oryzae*, Biochemical Tests, Rice (*Oryza sativa*), Bacterial Leaf Blight (BLB) Disease, Sekinchan. *Journal of Applied & Environmental Microbiology*. 4(3): 63–69. <https://doi.org/10.12691/jaem-4-3-3>.
- Joshi, A. U., Andharia, K. N., Patel, P. A., and Kotadiya, R. J. and Kothari, R. K. 2019. Plant Growth Promoting Rhizobacteria: Mechanism, Application, Advantages and Disadvantages. *Green biotechnology*. Daya Publishing House. New Delhi.
- Jufri, R. F. 2020. Microbial Isolation. *Journal La Lifesci*. 1(1): 18–23.

- Junaid, J. M., Dar, N. A., Bhat, T. A., Bhat, A. H. and Bhat, A. B. 2013. Commercial Biocontrol Agents and Their Mechanism of Action in the Management of Plant Pathogens. *Int. J. Modern Plant & Anim.* 1(2): 39–57.
- Karakoç, Ş. and Aksöz, N. 2006. Some Optimal Cultural Parameters for Gibberellic Acid Biosynthesis by *Pseudomonas* sp. *Turkish Journal of Biology*. 30(2): 81–85.
- Karpagam, T. and Nagalakshmi, P. K. 2014. Isolation and Characterization of Phosphate Solubilizing Microbes from Agricultural soil. *Int.J.Curr.Microbiol.App.Sci.* 3(3): 601–614.
- Kementerian Pertanian reublik Indonesia. 2018. Optimis Produksi Beras 2018. *Kementerian Pertanian Republik Indonesia*. 2. www.pertanian.go.id/home. Diakses tanggal 22 Oktober 2020.
- Kesaulya, H., Baharuddin, Zakaria, B. and Syaiful, S. A. (2015). Isolation and Physiological Characterization of PGPR from Potato Plant Rhizosphere in Medium Land of Buru Island. *Procedia Food Science*. 3: 190–199. <https://doi.org/10.1016/j.profoo.2015.01.021>.
- Khaeruni, A., Nirmala, T., Hisein, W. S. A., Gusnawaty, G., Wijayanto, T. dan Sutariati, G. A. K. 2020. Potensi dan Karakterisasi Fisiologis Bakteri Endofit Asal Tanaman Kakao Sehat sebagai Pemacu Pertumbuhan Benih Kakao. *Jurnal Ilmu Pertanian Indonesia*. 25(3): 390–397. <https://doi.org/10.18343/jipi.25.3.388>.
- Khaeruni, A., Rahim, A., Syair. dan Adriani. 2014. Induksi Ketahanan Terhadap Penyakit Hawar Daun Bakteri pada Tanaman Padi di Lapangan Menggunakan Rizobakteri Indigenos. *J. HPT Tropika*. 14(1): 57–63.
- Khaeruni, A., Taufik, M., Wijayanto, T. dan Johan, E. A. 2014. Perkembangan Penyakit Hawar Daun Bakteri pada Tiga Varietas Padi Sawah yang Diinokulasi pada Beberapa Fase Pertumbuhan. *Jurnal Fitopatologi Indonesia*. 10(4): 119–125. <https://doi.org/10.14692/jfi.10.4.119>.
- Khan, A. L., Halo, B. A., Elyassi, A., Ali, S., Al-Hosni, K., Hussain, J., Al-Harrasi, A. and Lee, I. J. 2016. Indole Acetic Acid and ACC Deaminase from Endophytic Bacteria Improves the Growth of *Solanum lycopersicum*. *Electronic Journal of Biotechnology*. 21: 58–64. <https://doi.org/10.1016/j.ejbt.2016.02.001>.

- Khare, E., Mishra, J. and Arora, N. K. 2018. Multifaceted Interactions Between Endophytes and Plant: Developments and Prospects. *Frontiers in Microbiology*. 9: 1-12. <https://doi.org/10.3389/fmicb.2018.02732>.
- Kim, S.L., Song, J. T., Jeong, J. Y. and Seo, H. S. 2016. Niclosamide Inhibits Leaf Blight Caused by *Xanthomonas oryzae* In Rice. *Scientific Reports*. 6: 1–13. <https://doi.org/10.1038/srep21209>.
- Kim, S. R., Torollo, G., Yoon, M. R., Kwak, J., Lee, C. K., Prahalada, G. D., Choi, I. R., Yeo, U. S., Jeong, O. Y., Jena, K. K. and Lee, J. S. 2018. Loss-of-Function Alleles of Heading Date 1 (Hd1) are Associated with Adaptation of Temperate Japonica Rice Plants to the Tropical Region. *Frontiers in Plant Science*. 9: 1–14. <https://doi.org/10.3389/fpls.2018.01827>.
- Klement, Z. and Goodman, R. N. 1967. The Hypersensitive Reaction to Infection by Bacterial Plant Pathogens. *Annual Review of Phytopathology*. 5(1): 17-44. <https://doi.org/10.1146/annurev.py.05.090167.000313>.
- Kloepper, J. W., Reddy, M. S., Rodriguez-Kabana, R., Kenney, D. S., Kokalis-Burelle, N., Martinez-Ochoa, N. and Vavrina, C. S. 2004. Application for Rhizobacteria in Transplant Production and Yield Enhancement. *Acta Horticulturae*. 631: 217–229. <https://doi.org/10.17660/actahortic.2004.631.28>.
- Kloepper, J. W., Rodríguez-Kábana, R., Zehnder, G. W., Murphy, J. F., ikora, E. and Fernández, C. 1999). Plant Root-Bacterial Interactions in Biological Control of Soilborne Diseases and Potential Extension to Systemic and Foliar Diseases. *Australasian Plant Pathology*. 28(1): 21–26. <https://doi.org/10.1071/AP99003>.
- Köhl, J., Kolnaar, R. and Ravensberg, W. J. 2019. Mode of Action of Microbial Biological control agents against plant diseases: Relevance beyond Efficacy. *Frontiers in Plant Science*. 10: 1–19. <https://doi.org/10.3389/fpls.2019.00845>.
- Kristiana, R., Sibero, M. T., Farisa, M. Y., Ayuningrum, D., Dirgantara, D., Hanafi, M., Radjasa, O. K., Sabdono, A. and Trianto, A. 2019. Antibacterial Potential of Nudibranch-Associated Bacteria from Saparua and Nusa Laut Islands, Indonesia. *Biodiversitas*. 20(7): 1811–1819. <https://doi.org/10.13057/biodiv/d200704>.

- Kumar, A., Bahadur, I., Maurya, B. R., Raghuwanshi, R., Meena, V. S., Singh, D. K. and Dixit, J. 2015. Does a Plant Growth Promoting Rhizobacteria Enhance Agricultural Sustainability. *Journal of Pure and Applied Microbiology*. 9(1): 715–724.
- Kumar, A., Kumar, R., Sengupta, D., Das, S. N., Pandey, M. K., Bohra, A., Sharma, N. K., Sinha, P., Hajira, S. K., Ghazi, I. A., Laha, G. S. and Sundaram, R. M. 2020. Deployment of Genetic and Genomic Tools Toward Gaining a Better Understanding of Rice-*Xanthomonas oryzae* pv. *oryzae* Interactions for Development of Durable Bacterial Blight Resistant Rice. *Frontiers in Plant Science*. 11: 1-23. <https://doi.org/10.3389/fpls.2020.01152>.
- Kumar, A., Maurya, B. R. and Raghuwanshi, R. 2014. Isolation and Characterization of PGPR and Their Effect on Growth, Yield and Nutrient Content in Wheat (*Triticum aestivum* L.). *Biocatalysis and Agricultural Biotechnology*. 3(4): 121–128. <https://doi.org/10.1016/j.bcab.2014.08.003>.
- Kumar, R., Nongkhlaw, M., Acharya, C. and Joshi, S. R. 2013. Growth Media Composition and Heavy Metal Tolerance Behaviour of Bacteria Characterized from the Sub-Surface Soil of Uranium Rich Ore Bearing Site of Domiasiat in Meghalaya. *Indian Journal of Biotechnology*. 12: 115–119.
- Kundu, B. S., Nehra, K., Yadav, R. and Tomar, M. 2009. Biodiversity of Phosphate Solubilizing Bacteria in Rhizosphere of Chickpea, Mustard and Wheat Grown in Different Regions of Haryana. *Indian Journal of Microbiology*. 49(2): 120–127. <https://doi.org/10.1007/s12088-009-0016-y>.
- Kuntari, Z., Sumpono, dan Nurhamidah. 2017. Aktivitas Antioksidan Metabolit Sekunder Bakteri Endofit Akar Tanaman *Moringa oleifera* L (Kelor). *Jurnal Pendidikan Dan Ilmu Kimia*. 1(2): 80–84.
- Kurnia, K., Sadi, N. H. dan Jumianto, S. 2016. Isolasi Bakteri Heterotrof di Situ Cibuntu, Jawa Barat dan Karakterisasi Resistensi Asam dan Logam. *Life Science*. 5(1): 59–63.
- Kurniawati, S., Mutaqin, K. H. dan Giyanto. 2015. Eksplorasi dan Uji Senyawa Bioaktif Bakteri Agensia Hayati untuk Pengendalian Penyakit Kresek pada Padi. *J. HPT Tropika*. 15(2): 170–179.

- Lamichhane, J. R. and Varvaro, L. 2012. A New Medium for the Detection of Fluorescent Pigment Production by *Pseudomonads*. *Plant Pathology*. 62(3): 624–632. <https://doi.org/10.1111/j.1365-3059.2012.02670.x>.
- Larasati, E. D., Rukmi, M. I., Kusdiyantini, E. dan Ginting, R. C. B. 2018. Isolasi dan Identifikasi Bakteri Pelarut Fosfat dari Tanah Gambut. *Bioma : Berkala Ilmiah Biologi*. 20(1): 1-8. <https://doi.org/10.14710/bioma.20.1.1-8>.
- Larasati, T. R. D., Mulyana, N. dan Sudrajat, D. 2012. Pembuatan Bahan Pembawa Berbasis Vermikompos untuk Inokulan Bakteri Rhizosfer Peningkat Pertumbuhan Tanaman. *Prosiding Pertemuan dan Presentasi Ilmiah - Penelitian Dasar Ilmu Pengetahuan dan Teknologi Nuklir 2012*. 141–147.
- Lee, J. S., Torollo, G., Ndayiragije, A., Bizimana, J. B., Choi, I. R., Gulles, A., Yeo, U. S., Jeong, O. Y., Venkatanagappa, S. and Kim, B. K. 2018. Genetic Relationship of Tropical Region-Bred Temperate Japonica Rice (*Oryza sativa*) Plants and Their Grain Yield Variations in Three Different Tropical Environments. *Plant Breeding*. 137(6): 857–864. <https://doi.org/10.1111/pbr.12646>.
- Lee, K. S., Rasabandith, S., Angeles, E. R. and Khush, G. S. 2003. Inheritance of Resistance to Bacterial Blight in 21 Cultivars of Rice. *Genetics and Resistance*. 93(2): 147–152.
- Leiwakabessy, C. dan Latupeirissa, Y. 2013. Eksplorasi Bakteri Endofit sebagai Agens Hayati pada Tanaman Kersen (*Muntingia calabura* L.). *Jurnal Budidaya Pertanian*. 9(1): 16–21.
- Leiwakabessy, C., Sinaga, M. S., Mutaqin, K. H., Trikoesoemaningtyas, T. dan Giyanto, G. 2017. Asam Salisilat sebagai Penginduksi Ketahanan Tanaman padi Terhadap Penyakit Hawar Daun Bakteri. *Jurnal Fitopatologi Indonesia*. 13(6): 207–215. <https://doi.org/10.14692/jfi.13.6.207>.
- Liempepas, A. G., Lolo, W. A. dan Yamlean, P. 2019. Isolasi dan Antibakteri dari Isolat Bakteri yang Berasosiasi dengan Spons *Callyspongia aerizusa* serta Identifikasi secara Biokimia. *Pharmacon*. 8(2), 380–387.
- Loan, L. C., Ngan, V. T. T. and Du, P. Van. 2006. Preliminary Evaluation on Resistance Genes Against Rice Bacterial Leaf Blight in Can Tho Province-Vietnam. *Omonrice*. 14: 44–47.

- Ma, R., Shen, J., Wu, J., Tang, Z., Shen, Q. and Zhao, F. J. 2014. Impact of Agronomic Practices on Arsenic Accumulation and Speciation in Rice Grain. *Environmental Pollution.* 194: 217–223. <https://doi.org/10.1016/j.envpol.2014.08.004>.
- Makarim, A. K. dan Suhartatik, E. 2009. *Morfologi dan fisiologi tanaman padi*. Balai Besar Penelitian tanaman padi. Bandung.
- Mano, H. and Morisaki, H. 2008. Endophytic Bacteria in the Rice Plant. *Microbes and Environments.* 23(2): 109–117. <https://doi.org/10.1264/jsme2.23.109>.
- Mardiah, Syamsuddin, dan Efendi. 2016. Perlakuan Benih Menggunakan Rizobakteri Pemacu Pertumbuhan Terhadap Pertumbuhan Vegetatif dan Hasil Tanaman Cabai Merah (*Capsicum annuum L.*). *Floratek.* 11(1): 25–35.
- Marista, E., Khotimah, S. dan Linda, R. 2013. Bakteri Pelarut Fosfat Hasil Isolasi dari Tiga Jenis Tanah Rizosfer Tanaman Pisang Nipah (*Musa paradisiaca* var. nipah) di Kota Singkawang. *Protobiont.* 2(2): 93–101.
- Marten, T. W., Advinda, L. dan Anhar, A. 2018. Pengaruh Sumber Mineral dan Jenis Isolat dari *Pseudomonas floorescen* Terhadap Produksi Siderofor. *Boi Sains.* 1(1): 67–74.
- Masciarelli, O., Llanes, A. and Luna, V. 2014. A New PGPR Co-Inoculated with *Bradyrhizobium japonicum* Enhances Soybean Nodulation. *Microbiological Research.* 169(7–8): 609–615. <https://doi.org/10.1016/j.micres.2013.10.001>.
- Masniawati, A., Kuswinanti, T., Gobel, R. B. dan Risnawaty, R. 2013. Identifikasi Cendawan Terbawa pada Benih Padi Lokal Aromatik Pulu Mandoti, Pulu Pinjan, dan Pare Lambau Asal Kabupaten Enrekang, Sulawesi Selatan. *Manasir.* 1(1): 51–59.
- Masnalah, R., Abadi, A. L., Astono, T. H. dan Aini, L. Q. 2013. Karakterisasi Bakteri Penyebab Penyakit Hawar Daun Edamame di Jember. *Berkala Ilmiah Pertanian.* 1(1): 10–14.
- Mathre, D. E., Cook, R. J. and Callan, N. W. 1999. From Discovery to Use Traversing the World of Commercializing Biocontrol Agensiats for Plant Disease Control. *Plant Disease.* 83(11): 972–983. <https://doi.org/https://doi.org/10.1094/PDIS.1999.83.11.972>.

- Mew, T. W., Cottyn, B., Pamplona, R., Barrios, H., Xiangmin, L., Zhiyi, C., Fan, L., Nilpanit, N., Arunyanart, P., Kim, P. V. and Du, P. V. 2004. Applying Rice Seed-Associated Antagonistic Bacteria to Manage Rice Sheath Blight in Developing Countries. *Plant Disease*, 88(5): 557–564. <https://doi.org/10.1094/PDIS.2004.88.5.557>.
- Minamiyama, H., Shimizu, M., Kunoh, H., Furumai, T. and Igarashi, Y. 2003. Multiplication of Isolate R-5 of Streptomyces Galbus on Rhododendron Leaves and Its Production of Cell Wall-Degrading Enzymes. *J Gen Plant Pathol.* 69: 65–70.
- Mitra, D., Mondal, A. K., Acharya, S. and Mukhopadhyay, A. 2014. Isolation and Characterization of Some Intracellular Pigmented Bacteria Isolated From Soil and Coal Powder. *Research in Biotechnology*. 5(6): 24–32.
- Mokrani, S., Rai, A., Belabid, L., Cherif, A., Cherif, H., Mahjoubi, M. and Nabti, E. 2018. *Pseudomonas* Diversity in Western Algeria: Role in the Stimulation of Bean Germination and Common Bean Blight Biocontrol. *European Journal of Plant Pathology*. 153(2): 397-415. <https://doi.org/10.1007/s10658-018-1566-9>.
- Moustaine, M., Elkahkahi, R., Benbouazza, A., Benkirane, R., & Achbani , E. H. 2017. Effect of Plant Growth Promoting Rhizobacterial (PGPR) Inoculation on Growth in Tomato (*Solanum Lycopersicum* L.) and Characterization for Direct PGP Abilities in Morocco. *International Journal of Environment, Agriculture and Biotechnology*. 2(2): 590–596. <https://doi.org/10.22161/ijeab/2.2.5>.
- Mubarik, N. R., Wibowo, R. H., Angraini, E., Mursyida, E. and Wahdi, E. 2014. Exploration of Bacterial Diversity at Cirebon Quarry. [Final Report]. *Quarry Life Award Project, Indonesia*. 1-13.
- Mulyana, N. dan Sudrajat, D. 2012. Formulasi Inokulan Konsorsia Mikroba Rhizosfer Berbasis Kompos Teriradiasi. *Prosiding Pertemuan dan Presentasi Ilmiah - Penelitian Dasar Ilmu Pengetahuan dan Teknologi Nuklir 2012*. 126-132.
- Munif, A., Wiyono, S. dan Suwarno. 2012. Isolasi Bakteri Endofit Asal Padi Gogo dan Potensinya sebagai Agens Biokontrol dan Pemacu Pertumbuhan. *Jurnal Fitopatologi Indonesia*. 8(3): 57–64. <https://doi.org/10.14692/jfi.8.3.57>.
- Murali, A. and Patel, S. 2017. The Effect of Different Heavy Metal Acetate Solutions on the Inhibition of Catalase Enzyme. *Journal of the South Carolina Academy of Science*. 15(2): 68–74.

- Murphy, J. and Riley, J. P. 1962. A Modified Single Solution Method for the Determination of Phosphate in Natural Waters. *Analytica Chemica Acta.* 27: 31–36. [https://doi.org/10.1016/s0003-2670\(00\)88444-5](https://doi.org/10.1016/s0003-2670(00)88444-5).
- Muslim, A. 2019. *Pengendalian hayati patogen tanaman dengan mikroorganisme antagonis*. Universitas Sriwijaya, Palembang.
- Nagendran, K., Karthikeyan, G., Faisal Peeran, M., Raveendran, M., Prabakar, K. and Raguchander, T. 2013. Management of Bacterial Leaf Blight Disease in Rice with Bndophytic bacteria. *World Applied Sciences Journal.* 28(12): 2229–2241. <https://doi.org/10.5829/idosi.wasj.2013.28.12.2009>.
- Naqvi, S. A. H. 2019. Bacterial Leaf Blight of Rice: An Overview of Epidemiology and Management with Special Reference to-Indian-Sub-Continent. *Pakistan Journal of Agricultural Research.* 32(2): 359. <https://doi.org/10.17582/journal.pjar/2019/32.2.359.380>.
- Naqvi, S. A. H., Perveen, R., Umer, ummad ud D., Malik, O., Rehman, A. ur, Wazeer, S. and Majid, T. 2014. Determination of Antibacterial Activity of Various Broad Spectrum Antibiotics Against *Xanthomonas oryzae* pv. *oryzae*, a Cause of Bacterial Leaf Blight of Rice. *International Journal of Microbiology and Mycology.* 2(3): 12-19.
- Nelson, L. M. 2004. Plant Growth Promoting Rhizobacteria (PGPR): Prospects for New Inoculants. *Plant Management Network.* 3(1): 0. <https://doi.org/10.1094/cm-2004-0301-05-rv>.
- Nithya, C., Gnanalakshmi, B. and Pandian, S. K. 2011. Assessment and Characterization of Heavy Metal Resistance in Palk Bay Sediment Bacteria. *Marine Environmental Research.* 71(4): 283-294. <https://doi.org/10.1016/j.marenvres.2011.02.003>.
- Nonci, M., Baharuddin, B., Rasyid, B. dan Pirman, P. 2015. Seleksi Bakteri Methanotrof (Pereduksi Emisi Gas Metan di Lahan Sawah) Berdasarkan Aktivitas Enzim Methan Monoooksigenase. *Jurnal Ilmu Lingkungan.* 13(2): 86–91. <https://doi.org/10.14710/jil.13.2.87-91>.
- Norsalis, E. 2011. Padi Gogo dan Sawah. *Repositori Universitas Sumatera Utara. Medan.* 14.

- Nurfitriani, R., Krishanti, N. P. R. ayu, Akhdiya, A. dan Wahyudi, A. T. (2016). Penapisan Bakteri Filosfer Penghasil Senyawa Bioaktif Anti *Xanthomonas oryzae* pv. *oryzae* Penyebab Penyakit Hawar Daun Bakteri pada Padi. *Jurnal Sumberdaya Hayati*. 2(1): 19–24.
- Nurhidayati, S., Faturrahman, F. dan Ghazali, M. 2015. Deteksi Bakteri Patogen yang Berasosiasi dengan *Kappaphycus alvarezii* (Doty) Bergejala Penyakit Ice-ice. *Jurnal Sains Teknologi & Lingkungan*. 1(2): 24-30. <https://doi.org/10.29303/jstl.v1i2.53>.
- Nurkartika, R., Ilyas, S. dan Machmud, M. 2017. Aplikasi Agens Hayati untuk Mengendalikan Hawar Daun Bakteri pada Produksi Benih Padi. *Jurnal Agronomi Indonesia*. 45(3): 235–242.
- Oetriana, L. (2011). Potensi Agen Hayati dalam Menghambat Pertumbuhan *Phytiuum sp.* Secara In Vitro. *Buletin Plasma Nutfah*. 17(2): 138-142. <https://doi.org/10.21082/blpn.v17n2.2011.p138-142>.
- Odelade, K. A. and Babalola, O. O. 2019. Bacteria, Fungi and Archaea Domains in Rhizospheric Soil and Their Effects in Enhancing Agricultural Productivity. *International Journal of Environmental Research and Public Health*. 16(20): 19. <https://doi.org/10.3390/ijerph16203873>.
- Ogawa, T. 1993. Methods and Strategy for Monitoring Race Distribution and Identification of Resistance Genes to Bacterial Leaf Blight (*Xanthomonas campestris* pv. *oryzae*) In Rice. *JARQ*. 27(2): 71–80.
- Ou, S. H. 1985. *Rice diseases*. Common. Mycol. Inst., Kew Surrey, England. 379pp.
- Pal, A., Chattopadhyay, A. and Paul, A. K. 2012. Diversity and Antimicrobial Spectrum of Endophytic Bacteria Isolated from *Paederia Foetida* L. *Int. J. Curr. Pharm. Res.* 4(3): 123–127.
- Pande, A., Pandey, P., Mehra, S., Singh, M. and Kaushik, S. 2017. Phenotypic and Genotypic Characterization of Phosphate Solubilizing Bacteria and Their Efficiency on the Growth of Maize. *Journal of Genetic Engineering and Biotechnology*,. 15(2): 379-391. <https://doi.org/10.1016/j.jgeb.2017.06.005>.
- Pandey, R. K., Jarvis, G. G. and Low, P. S. 2012. Efficient Synthesis of the Siderophore Petrobactin Via Antimony Triethoxide Mediated Coupling. *Tetrahedron Letters*. 53(13): 1627-1629. <https://doi.org/10.1016/j.tetlet.2012.01.074>.

- Pangestika, V., Karno, dan Kristanto, B. A. 2018. Peningkatan Kualitas Stek Pucuk Krisan (*Chrysanthemum morifolium*) Melalui Pemberian Indole-3-Butyric Acid sebagai Zat Pengatur Tumbuh. *J. Agro Complex.* 2(3): 221–228.
- Parida, I., Damayanti, T. A. dan Riyanto, G. 2016. Isolasi, Seleksi, dan Identifikasi Bakteri Endofit sebagai Agens Penginduksi Ketahanan Padi Terhadap Hawar Daun Bakteri. *Jurnal Fitopatologi Indonesia.* 12(6): 199–208. <https://doi.org/10.14692/jfi.12.6.199>.
- Park, M., Kim, C., Yang, J., Lee, H., Shin, W., Kim, S. and Sa, T. 2005. Isolation and Characterization of Diazotrophic Growth Promoting Bacteria from Rhizosphere of Agricultural Crops of Korea. *Microbiological Research.* 160(2): 127-133. <https://doi.org/10.1016/j.micres.2004.10.003>.
- Pas, A. A., Sopandie, D., Trikoesoemaningtyas, dan Santosa, D. A. 2015. Aplikasi Konsorsium Mikrob Filosfer dan Rizosfer untuk Meningkatkan Pertumbuhan dan Hasil Tanaman Padi. *Institut Pertanian Bogor (IPB) Kampus.* 24(1): 15–24.
- Patil, S., Bheemaraddi, M. C. and Shivannavar, C. T. 2014. Biocontrol Activity of Siderophore Producing *Bacillus subtilis* CTS-G24 Against wilt and Dry Root Rot Causing Fungi in Chickpea. *IOSR Journal of Agriculture and Veterinary Science.* 7(9): 63–68.
- Patten, C. L. and Glick, B. R. 2002. Role of *Pseudomonas putida* Indol Eacetic Acid in Development of the Host Plant Root System. *Applied and Environmental Microbiology.* 68(8): 3795-3801. <https://doi.org/10.1128/AEM.68.8.3795-3801.2002>.
- Paul, D. and Sinha, S. N. 2016. Isolation and Characterization of Phosphate Solubilizing Bacterium *Pseudomonas aeruginosa* KUPSB12 with Antibacterial Potential from River Ganga, India. *Annals of Agrarian Science.* 15(1): 1-7. <https://doi.org/10.1016/j.aasci.2016.10.001>.
- Permatasari, D. A. dan Nurhidayati, T. 2014. Pengaruh Inokulan Bakteri Penambat Nitrogen , Pertumbuhan Tanaman Cabai Rawit. *Jurnal Sains Dan Seni Pomits.* 3(2): 2337–3520.
- Petersen, J. and McLaughlin, S. 2016. Laboratory Exercises in Microbiology: Discovering the Unseen World Through Hands-On Investigation. *Academicworks.Cuny. Edu.* 195.

- Pinem, T. dan Syarif, Z. 2018). Intensitas Serangan *Xanthomonas oryzae* pv. *oryzae* pada Beberapa Varietas Padi Sawah dan Dampaknya Terhadap Pertumbuhan dan Hasil Panen. *JPT: Jurnal Proteksi Tanaman*. 2(1): 9-17.
- Prabawati, A., Susilowati, A. dan Sugiyarto. 2019. Bakteri Filosfer Padi sebagai Kandidat Agen Biokontrol Terhadap *Xanthomonas oryzae* pv. *oryzae* (*Xoo*) Penyebab Penyakit Hawar Daun Bakteri. *Pros Sem Nas Masy Biodiv Indon.* 5(2): 256-262. <https://doi.org/10.13057/psnmbi/m050219>.
- Pradana, A. P., Munif, A. dan Supramana, S. 2016. Bakteri Endofit Asal Berbagai Akar Tanaman sebagai Agens Pengendali Nematoda Puru Akar *Meloidogyne incognita* pada Tomat. *Jurnal Fitopatologi Indonesia*. 12(3): 75-82. <https://doi.org/10.14692/jfi.12.3.75>.
- Pranoto, E., Fauzi, G. dan Hingdri. 2014. Isolasi dan Karakterisasi Bakteri Endofit pada Tanaman Teh (*Camellia Sinensis* (L.) O.Kuntze) Produktif dan Belum Menghasilkan Klon GMB 7 Dataran Tinggi. *Biospecies*. 7(1): 1–7.
- Prasetyoputri, A. dan Atmosukarto, I. 2006. Mikroba Endofit: Sumber Molekul Acuan Baru yang Berpotensi. *Bio Trends*. 1(2): 13–15.
- Premi, M. S. G., Narmadha, R. and Bernatin, T. 2019. A Brief Survey on Diseases of Paddy Plant. *Journal Pharmaceutical Sciences and Research*. 11(7): 2739–2743.
- Prihanto, A. A., Timur, H. D. L., Jaziri, A. A., Nurdiani, R. dan Pradarameswari, K. A. 2018. Isolasi dan Identifikasi Bakteri Endofit Mangrove *Sonneratia alba* Penghasil Enzim Gelatinase dari Pantai Sendang Biru, Malang, Jawa Timur. *Indonesia Journal of Halal*. 1(1): 31–42. <https://doi.org/10.14710/halal.v1i1.3114>.
- Prihastuti. 2016. Prospek Komersialisasi Produk Mikroba di Bidang Pertanian. *El-Hayah*. 5(4): 159–167.
- Prihatiningsih, N., Arwiyanto, T., Hadisutrisno, B. dan Widada, J. 2015. Mekanisme Antibiosis *Bacillus subtilis* B315 untuk Pengendalian Penyakit Layu Bakteri Kentang. *Jurnal HPT Tropika*. 15(1): 64-71.
- Prihatiningsih, N., Djatmiko, H. A. dan Lestari, P. 2017. Aktivitas Siderofor *Bacillus subtilis* sebagai Pemacu Pertumbuhan dan Pengendali Patogen Tanaman Terung. *Jurnal HPT Tropika*. 17(2): 170–178.

- Prihatiningsih, N., Djatmiko, H. A. dan Lestari, P. 2019. Bakteri Rizosfer Padi sebagai Agens Hayati *Xanthomonas oryzae* pv. *oryzae* dan Pengaruhnya Terhadap Perkecembahan Benih Padi. *Prosiding Seminar Nasional Dan Call for Papers.* 1: 13–21.
- Pulungan, A. S. dan Tumangger, D. E. 2018. Isolasi dan Karakterisasi Bakteri Endofit Penghasil Enzim Katalase dari Daun Buas Buas (*Premna pubescens* Blume) *Jurnal Biologi Lingkungan, Industri, Kesehatan.* 5(1), 72–80.
- Purwaningsih, S. 2016. Isolasi, Populasi dan Karakterisasi Bakteri Pelarut Fosfat pada Daerah Perakaran dan Tanah dari Bengkulu, Sumatra. *Jurnal Teknologi Lingkungan.* 13(1): 101. <https://doi.org/10.29122/jtl.v13i1.1410>.
- Puspita, F., Saputra, S. I. dan Merini, D. J. 2018. Uji Beberapa Konsentrasi Bakteri *Bacillus sp.* Endofit untuk Meningkatkan Pertumbuhan Bibit Kakao (*Theobroma cacao* L.). *Jurnal Agronomi Indonesia (Indonesian Journal of Agronomy).* 46(3): 322-327. <https://doi.org/10.24831/jai.v46i3.16342>.
- Quibod, I. L., Atieza-Grande, G., Oreiro, E. G., Palmos, D., Nguyen, M. H., Coronejo, S. T., Aung, E. E., Nugroho, C., Roman-Reyna, Roman-Reyna., Burgos, Burgos, M. R., Capistrano, P., Dossa, S. G., Onaga, G., Saloma, C., Cruz, C. V. and Oliva, R. 2020. The Green Revolution Shaped the Population Structure of the Rice Pathogen *Xanthomonas oryzae* pv. *oryzae*. *ISME Journal.* 14(2): 492–505. <https://doi.org/10.1038/s41396-019-0545-2>.
- Ramesh, C., Vinithkumar, N. V., Kirubagaran, R., Venil, C. K. and Dufossé, L. 2019. Multifaceted Applications of Microbial Pigments: Current Knowledge, Challenges and Future Directions for Public Health Implications. *Microorganisms.* 7(7): 1-46. <https://doi.org/10.3390/microorganisms7070186>.
- Ramos, J.-L., Goldberg, J. B., & Filloux, A. 2015. *Pseudomonas*. Volume 7: New Aspects of *Pseudomonas* Biology. Springer Dordrecht Heidelberg New York London.
- Ran, Y., Chen, H., Ruan, D., Liu, H., Wang, S., Tang, X. and Wu, W. 2018. Identification of Factors Affecting Rice Yield Gap in Southwest China: An Experimental Study. *Plos One.* 13(11): 1-15. <https://doi.org/10.1371/journal.pone.0206479>.

- Ranjan, A., Mahalakshmi, M. R. and Sridevi, M. 2013. Isolation and Characterization of Phosphate-Solubilizing Bacterial Species from Different Crop Fields of Salem, Tamil Nadu, India. *International Journal of Nutrition, Pharmacology, Neurological Diseases.* 3(1): 29–33. <https://doi.org/10.4103/2231-0738.106982>.
- Ratnakaran, P., Bhoir, M. and Durve-gupta, A. 2020. Isolation and Characterization of Pigment Producing Bacteria Isolated from Waste. *International Journal of Applied Research.* 6(4): 252-260.
- Reiner, K. 2010. Catalase Test Protocol. *American Society for Microbiology.* 1-9.
- Reinhold-Hurek, B. and Hurek, T. 2011. Living Inside Plants: Bacterial Endophytes. *Current Opinion in Plant Biology.* 14(4): 435-443. <https://doi.org/10.1016/j.pbi.2011.04.004>.
- Reisberg, E. E., Hildebrandt, U., Riederer, M. and Hentschel, U. 2013. Distinct Phyllosphere Bacterial Communities on Arabidopsis Wax Mutant Leaves. *Plos One.* 8(11): 12. <https://doi.org/10.1371/journal.pone.0078613>.
- Reitsma, J. and Schure, P. S. J. 1950. Kresek a Bacterial Disease of Rice. *Contributions from the General Agricultural Research Station.* Bogor, 117: 1–17.
- Remans, R., Wood, S. A., Saha, N., Anderman, T. L. and DeFries, R. S. 2014. Measuring Nutritional Diversity of National Food Supplies. *Global Food Security.* 3(3-4): 174-182. <https://doi.org/10.1016/j.gfs.2014.07.001>.
- Resti, Z., Habazar, T., Putra, D. P. dan Nasrun. 2013. Skrining dan Identifikasi Isolat Bakteri Endofit untuk Mengendalikan Penyakit Hawar Daun Bakteri pada Bawang Merah. *J. HPT Tropika.* 13(2): 167–178.
- Resti, Z., Habazar, T., Putra, D. P. dan Nasrun. 2016. Aktivitas Enzim Peroksidase Bawang Merah yang Diintroduksi dengan Bakteri Endofit dan Tahan Terhadap Penyakit Hawar Daun Bakteri (*Xanthomonas axonopodis* pv. *allii*). *J. HPT. Tropika.* 16(2): 131-137.

- Retamales, J., González-contreras, A., Salazar, S., Toranzo, A. E. and Avendaño-herrera, R. 2012. Iron Utilization and Siderophore Production by *Streptococcus phocae* Isolated from Diseased Atlantic salmon (*Salmo salar*). *Aquaculture*. 364-365, 305-311. <https://doi.org/10.1016/j.aquaculture.2012.08.047>.
- Risan, M. H. 2017. Isolation and Identification of Bacteria from Under Fingernails. *International Journal of Current Microbiology and Applied Sciences*. 6(8): 3584-3590. <https://doi.org/10.20546/ijcmas.2017.608.430>.
- Rori, C. A., Kandou, F. E. F. dan Tangapo, A. M. 2020. Isolasi dan Uji Antibakteri dari Bakteri Endofit Tumbuhan Mangrove *Avicennia marina*. *Koli Jurnal*. 1(1): 7. <https://doi.org/10.35799/jbl.11.2.2020.28338>.
- Rozen, N. dan Kasim, M. 2018. *Teknik Budidaya Tanaman Padi Metode SRI (The System of Rice Intensification)*. Raja Grafindo Persada Depok.
- Ryan, R. P., Germaine, K., Franks, A., Ryan, D. J. and Dowling, D. N. 2008. Bacterial Endophytes: Recent Developments and Applications. *FEMS Microbiology Letters*. 278(1): 1-9. <https://doi.org/10.1111/j.1574-6968.2007.00918.x>.
- Saber, F. M. A., Abdelhafez, A. A., Hassan, E. A. and Ramadan, E. M. 2015. Characterization of Fluorescent *Pseudomonads* Isolates and Their Efficiency on the Growth Promotion of Tomato Plant. *Annals of Agricultural Sciences*. 60(1): 131-140. <https://doi.org/10.1016/j.aoas.2015.04.007>.
- Sagervanshi, A., Kumari, P., And, A. N. and Kumar, A. 2012. Media Optimization for Inorganic Phosphate Solubilizing Bacteria Isolated From Anand Argiculture Soil. *International Jounal of Life Science & Pharma Reasarch*. 2(3): 245-255.
- Saha, S., Garg, R., Biswas, A. and Rai, A. B. 2015. Bacterial Diseases of Rice: An Overview. *Journal of Pure and Applied Microbiology*. 9(1): 725736.
- Aarab, S., Ollero, F. J., Megías, M., Laglaoui, A., Laglaoui, A., Bakkali, M and Arakrak, A. (2015). Isolation and screening of bacteria from rhizospheric soils of rice fields in Northwestern Morocco for different plant growth promotion (PGP) activities: An in vitro study. *International Journal of Current Microbiology and Applied Sciences*. 4(1): 260-269.

- Salamiah, dan Wahdah, R. 2015 Pemanfaatan Plant Growth Promoting Rhizobacteria (PGPR) dalam Pengendalian Penyakit Tungro pada Padi Lokal Kalimantan Selatan. *Pros Sem Nas Masy Biodiverstas Indonesia*. 1(6): 1448-1456. <https://doi.org/10.13057/psnmbi/m010632>.
- Sanjotta, G. and Manawadi, S. 2016. Isolation, Screening and Characterization of Phosphate Solubilizing Bacteria from Karwar Costal Region. *International Journal of Research Studies in Microbiology and Biotechnology*. 2(2): 1-6. <https://doi.org/10.20431/2454-9428.0202001>.
- Santos, M. L. dos, Berlitz, D. L., Wiest, S. L. F., Schünemann, R., Knaak, N. and Fiua, L. M. 2018. Benefits Associated with the Interaction of Endophytic Bacteria and Plants. *Brazilian Archives of Biology and Technology*. 61(0): 1-11. <https://doi.org/10.1590/1678-4324-2018160431>.
- Santoyo, G., Moreno-Hagelsieb, G., del Carmen Orozco-Mosqueda, M. and Glick, B. R. 2016. Plant Growth-Promoting Bacterial Endophytes. *Microbiological Research*. 183: 92-99. <https://doi.org/10.1016/j.micres.2015.11.008>.
- Saridewi, L. P., Prihatiningsih, N. dan Djatmiko, H. A. 2020. Karakterisasi Biokimia Bakteri Endofit Akar Terung sebagai Pemacu Pertumbuhan Tanaman dan Pengendali Penyakit Layu Bakteri In Planta. *Jurnal Proteksi Tanaman Tropis*. 1(1): 1-8. <https://doi.org/10.19184/jptt.v1i1.15579>.
- Schaad, N. W., Jones, J. B. and Chun, W. 2001. *Laboratory guide for identification of Plant Pathogenic bacteria, Third edition*. Plant Pathology (Vol. 50). <https://doi.org/10.1046/j.1365-3059.2001.00635.x>.
- Selvi, K., Paul, J., Vijaya, V. and Saraswathi, K. 2017. Analyzing the Efficacy of Phosphate Solubilizing Microorganisms by Enrichment Culture Techniques. *Biochemistry & Molecular Biology Journal*. 3(1): 1-7. <https://doi.org/10.21767/2471-8084.100029>.
- Septia, E. D. dan Parlindo, F. 2019. Keanekaragaman dan Sebaran Mikroba Endofit Indigenous pada Tanaman Kedelai (*Glycine max* (L.) Merril). *Agriprima, Journal of Applied Agricultural Sciences*. 3(1): 1-14. <https://doi.org/10.25047/agriprima.v3i1.159>.

- Septiani, T., Zul, D. dan Isda, M. N. 2014. Uji Efektifitas Bakteri Pelarut Fosfat Penghasil Asam Sianida Asal Tanah Gambut Riau dalam Mengendalikan Gulma Dominan pada Tanaman Kelapa Sawit. *JOM FMIPA*. 1(2): 581-589.
- Setiawan, dan Wahyudi, A. 2014. Pengaruh Giberelin Terhadap Pertumbuhan Beberapa Varietas Lada untuk Penyediaan Benih Secara Cepat. *Bulletin Littrao*. 25(2): 111-118.
- Setiawati, M. R. dan Pranoto, E. 2016. Perbandingan Beberapa Bakteri Pelarut Fosfat Eksogen pada Tanah Andisol sebagai Areal Pertanaman Teh Dominan di Indonesia. *Penelitian Teh dan Kina*. 18(2): 159-164.
- Shaheen, R., Sharif, M.Z., Amrao, L., Zheng, A., Manzoor, M., Majeed, D., Kiran, H., Jafir, M. and Ali, A. 2019. Investigation of Bacterial Leaf Blight of Rice Through Various Detection Tools and Its Impact on Crop Yield in Punjab, Pakistan. 51(1): 307-312. <https://doi.org/10.30848/PJB2019>.
- Shankara, K., Patil, M. B., Pramesh, D., Sunkad, G., Yenjerappa, S. T., Ibrahim, M., Rajesh, N. L. and Chikkannaswamy. 2017. Characterization of *Xanthomonas oryzae* pv. *oryzae* Isolates from Rice Growing Regions of Southern India. *International Journal of Pure & Applied Bioscience*. 5(4): 452-461. <https://doi.org/10.18782/2320-7051.2436>.
- Shanti, M. L., Devi, G. L., Kumar, G. N. and Shashidhar, H. E. 2010. Molecular Marker-Assisted Selection: A Tool for Insulating Parental Lines of Hybrid Rice Against Bacterial Leaf Blight. *International Journal of Plant Pathology*. 1(3): 114-123. <https://doi.org/10.3923/ijpp.2010.114.123>.
- Sharma, S. B., Sayyed, R. Z., Trivedi, M. H. and Gobi, T. A. 2013. Phosphate Solubilizing Microbes: Sustainable Approach for Managing Phosphorus Deficiency in Agricultural Soils. *Springer Plus a Springer Open Journal*. 2(578): <https://doi.org/10.1128/jcm.35.12.3305-3307.1997>.
- Shields, P. and Cathcart, L. 2010. Oxidase Test Protocol. *American Society for Microbiology*.

- Shin, W., Islam, R., Benson, A., Joe, M. M., Kim, K., Gopal, S., Samaddar, S., Banerjee, S. and Sa, T. 2016. Role of Diazotrophic Bacteria in Biological Nitrogen Fixation and Plant Growth Improvement. *Korean Journal of Soil Science and Fertilizer.* 49(1): 16-29. <https://doi.org/10.7745/KJSSF.2016.49.1.017>.
- Shruti, K., Arun, K. and Yuvneet, R. 2013. Potential Plant Growth-Promoting Activity of Rhizobacteria *Pseudomonas sp* in *Oryza sativa*. *J. Nat. Prod. Plant Resour.* 3(4): 38-50.
- Sihombing, I. H., Pinem, M. I. dan Safni, I. 2019. Pengujian Bakteri Endofit Asal Cabai dalam Menekan Pertumbuhan *Fusarium oxysporum f.sp. capsici* Penyebab Penyakit Layu Fusarium pada Cabai. *Jurnal Agroteknologi FP USU.* 7(2): 339-346.
- Simanjuntak, P., Bustanussalam, Otovina, D. M., Rahayunigsih, M. dan Said, E. G. 2004. Isolasi dan Identifikasi Artemisinin dari Hasil Kultivasi Mikroba Endofit dari Tanaman *Artemisia spp.* *Majalah Farmasi Indonesia.* 15(2): 68-74.
- Simonetti, E., Viso, N. P., Montecchia, M., Zilli, C., Balestrasse, K. and Carmona, M. 2015. Evaluation of Native Bacteria and Manganese Phosphite for Alternative Control of Charcoal Root Rot of Soybean. *Microbiological Research.* 180: 40-48. <https://doi.org/10.1016/j.micres.2015.07.004>.
- Siregar, E. S. dan Nasution, F. E. 2019. Peranan Pola Pengairan dan Metode Pengendalian Hama Tikus (*Rattus argentiventer*) Terhadap Produksi Padi Sawah (*Oryza sativa L.*). *Jurnal Agroteknologi Fakultas Pertanian Universitas Muhammadiyah Tapanuli Selatan.* 4(2): 44-52.
- Siswanto, E., Sinaga, B. M. dan Harianto, 2018. Dampak Kebijakan Perberasan pada Pasar Beras dan Kesejahteraan Produsen dan Konsumen Beras di Indonesia. *Jurnal Ilmu Pertanian Indonesia.* 23(2): 93-100. <https://doi.org/10.18343/jipi.23.2.93>.
- Sitohang, F. R. H., Siregar, L. A. M. dan Putri, L. A. P. 2014. Evaluasi Pertumbuhan dan Produksi Beberapa Varietas Padi Gogo (*Oryza sativa L.*) pada Beberapa Jarak Tanam yang Berbeda. *Jurnal Online Agroteknologi.* 2(2): 668-679.

- Situmorang, E. C., Prameswara, A., Sinhya, H. C., Toruan-Mathius, N. and Liwang, T. 2015. Indigenous Phosphate Solubilizing Bacteria from Peat Soil for An Eco-Friendly Biofertilizer In Oil Palm Plantation. *KnE Energy.* 1(1): 65-72. <https://doi.org/10.18502/ken.v1i1.324>.
- Sivasakthivelan, P. and Stella, D. 2012. Studies on the Phytohormone Producing Potential of Agriculturally Beneficial Microbial (ABM) Isolates from Different Rhizosphere Soils of Sunflower in Tamil Nadu. *International Journal of Pharmaceutical & Biological Archives.* 3(5): 1150-1156.
- Sodiq, A. H., Setiawati, M. R., Santosa, D. A. dan Widayat, D. 2019. Potensi Mikroba Asal Mikroorganisme Lokal dalam Meningkatkan Perkecambahan Benih Paprika. *Jurnal Agroekotek.* 11(2): 214-226.
- Sopialena. 2018. *Pengendalian Hayati dengan Memberdayakan Potensi Mikroba.* Mulawarman University Press.
- Souza, de R., Ambrosini, A. and Passaglia, L. M. P. 2015. Plant Growth-Promoting Bacteria as Inoculants in Agricultural Soils. *Genetics and Molecular Biology.* 38(4): 401-419. <https://doi.org/10.1590/S1415-475738420150053>.
- Strobel, G. A. 2003. Endophytes as Sources of Bioactive Products. *Microbes and Infection.* 5(6): 535-544. [https://doi.org/10.1016/S1286-4579\(03\)00073-X](https://doi.org/10.1016/S1286-4579(03)00073-X).
- Strobel, G., Daisy, B., Castillo, U. and Harper, J. 2004. Natural Products from Endophytic Microorganisms. *Journal of Natural Products.* 67(2): 257-268. <https://doi.org/10.1021/np030397v>.
- Suardana, I. W., Utama, I. H. dan Wibowo, M. H. 2014. Identifikasi Escherichia Coli O157:H7 dari Feses Ayam dan Uji Profil Hemolisinya pada Media Agar Darah. *Jurnal Kedokteran Hewan.* 8(1): 1-5.
- Sudir, Nuryanto, B. dan Kadir, T. S. 2012. Epidemiologi, Patotipe, dan Strategi Pengendalian Penyakit Hawar Daun Bakteri pada Tanaman Padi. *Iptek Tanaman Pangan.* 7(2): 79-87.
- Sudir, dan Sutaryo, B. 2011. Reaksi Padi Hibrida Introduksi Terhadap Penyakit Hawar Daun Bakteri dan Hubungannya dengan Hasil Gabah. *Penelitian Pertanian Tanaman Pangan.* 30(2): 88-94.

- Sudir, Yuliani, D. dan Wirajaswadi, L. 2015. Komposisi dan Sebaran Patotipe *Xanthomonas oryzae* pv. *oryzae*, Penyakit pada Padi di Nusa Tenggara Barat. *Penelitian Pertanian Tanaman Pangan*. 34(2): 113-120.
- Sukmadewi, D. K. T., Anas, I., Widyastuti, R. dan Citraresmini, A. 2017. Uji Fitopatogenitas, Hemolisis Serta Kemampuan Mikrob dalam Melarutkan Fosfat dan Kalium. *J. Il. Tan. Lingk.* 19(2): 68-73.
- Sullivan, M., Daniells, E., and Southwick, C. (2011). *CPHST Pest Datasheet for Xanthomonas oryzae* pv. *oryzae*. Usda-Aphis-Ppq-Cphst.
- Sunanto, dan Rauf, A. W. 2018. Respon Petani Terhadap Pelaksanaan Displai Padi Gogo vub pada Lahan sub Optimal di Sulawesi Selatan. *Jurnal Sosial Ekonomi Pertanian*. 14(2): 143-160. <https://doi.org/10.20956/jsep.v14i2.4377>.
- Suparyono, Sudir, and Suprihanto. 2004. Pathotype Profile of *Xanthomonas oryzae* pv. *oryzae* Isolates from the Rice Ecosystem in Java. *Indonesian Journal of Agricultural Science*. 5(2): 63-69.
- Sureshbabu, K., Amaresan, N. and Kumar, K. 2016. Amazing Multiple Function Properties of Plant Growth Promoting Rhizobacteria in the Rhizosphere Soil. *International Journal of Current Microbiology and Applied Sciences*. 5(2): 661-683. <https://doi.org/10.20546/ijcmas.2016.502.074>.
- Suryadi, Y., Samudra, I. M., Priyatno, T. P., Susilowati, D. N., Lestari, P., Fatimah, F. and Kadir, T. S. 2016. Determination of Pathotypes from Indonesian *Xanthomonas oryzae* pv. *oryzae* Population Causing Bacterial Leaf Blight and Their Reactions on Differential Rice. *Makara Journal of Science*. 20(3): 109-118. <https://doi.org/10.7454/mss.v20i3.6241>.
- Susanto, U. dan Sudir. 2012. Ketahanan Genotipe Padi Terhadap *Xanthomonas oryzae* pv. *oryzae* Patotipe III, IV, dan VIII. *Penelitian Pertanian Tanaman Pangan*. 31(2): 108-116.
- Susila, K. D., Sudana, I. M., Ristiati, N. P. and Adnyana, I. M. 2016. Phosphatase Activity and Phosphate Solubility by Phosphate Solubilizing Rhizobacteria in Volcanic Soils of Pancasari, Bali. *International Journal of Biosciences and Biotechnology*. IV(1): 39-48.

- Susilo, H., Mubarik, N. R. dan Triadiati, T. 2015. Karakteristik Rizobakteri Penghasil Giberelin yang Diiisolasi dari Tanah Hutan di Banten. *Current Biochemistry.* 2(1): 32-41. <https://doi.org/10.29244/cb.2.1.32-41>.
- Susilowati, D. N., Ginanjar, H., Yuniarti, E., Setyowati, M. dan Roostika, I. 2018. Karakterisasi Bakteri Endofit Tanaman Purwoceng sebagai Penghasil Senyawa Steroid dan Antipatogen. *Jurnal Penelitian Tanaman Industri.* 24(1): 1-10. <https://doi.org/10.21082/littri.v24n1.2018.1-10>.
- Susilowati, D. N., Hidayatun, N., Tasliah, dan Mulya, K. 2010. Keragaman Bakteri Endofitik pada Empat Jenis Varietas Padi dengan Metode ARDRA (Amplified Ribosomal DNA Restriction Analysis). *Berita Biologi.* 10(2): 241-248.
- Susilowati, D. N., Riyanti, E. I., Setyowati, M. and Mulya, K. 2018. Indole-3-Acetic Acid Producing Bacteria and Its Application on the Growth of Rice. *AIP Conference Proceedings.* <https://doi.org/10.1063/1.5050112>.
- Susilowati, D. N. dan Setyowati, M. 2016. Analisis Aktivitas Nitrogenase dan Gen Nifh Isolat Bakteri Rhizosfer Tanaman Padi dari Lahan Sawah Peisisir Jawa Barat. *Al-Kauniyah.* 9(2): 125-138.
- Suyadi. 2020. *Jelay (Coix lacryma-joby L.) Bahan Pangan Pokok Alternatif dan Fungsional.* Deepublish. Yogyakarta.
- Swings, J., Mooter, M. Van Den Vauterin, L., Hoste, B., Gillis, M., Mew, T. W. and Kersters, K. 1990. Reclassification of the Causal Agents of Bacterial Blight (*Xanthomonas campestris* pv. *oryzae*) and Bacterial Leaf Streak (*Xanthomonas campestris* pv. *oryzicola*) of Rice As Pathovars of *Xanthomonas oryzae* (ex Ishiyama 1922) sp. Nov., Nom. Rev. *International Journal of Systematic Bacteriology.* 40(3): 309–311.
- Syahri, Y. F., Baharuddin, Fachruddin, and Yani, A. 2019. Biochemical Tests and Identification of Potential Indigenous Bacteria from Nickel Post-Mining Land in Pomalaa. *IOP Conference Series: Earth and Environmental Science.* 382(1): 8. <https://doi.org/10.1088/1755-1315/382/1/012020>.
- Tangapo, A. M. 2020. Potensi Bakteri Endofit Ubi Jalar (*Ipomoea batatas* L.) dalam Menghasilkan Hormon Indole Acetic Acid (IAA) dengan Penambahan L-triptofan. *Jurnal Bios Logos.* 10(1): 21-26. <https://doi.org/10.35799/jbl.10.1.2020.27980>.

- Tasliah. 2012. Gen Ketahanan Tanaman Padi Terhadap Bakteri Hawar Daun (*Xanthomonas oryzae* pv. *oryzae*). *Jurnal Litbang Pertanian*. 31(3): 103-112.
- Taufik, M., Rahman, A., Wahab, A. dan Hidayat, S. H. 2010. Mekanisme Ketahanan Terinduksi oleh Plant Growth Promotting Rhizobacteria (PGPR) pada Tanaman Cabai Terinfeksi *Cucumber Mosaik Virus* (CMV). *Jurnal Hortikultura*. 20(3): 274-283. <https://doi.org/10.21082/jhort.v20n3.2010.p>.
- Tridesianti, S., Akhdiya, A. dan Wahyudi, A. T. 2016. Formulasi Bakteri Filosfer Padi dan Aplikasinya untuk Mengendalikan Penyakit Hawar Daun Bakteri. *Jurnal Fitopatologi Indonesia*. 12(6): 191-198. <https://doi.org/10.14692/jfi.12.6.191>.
- Utami, D. W., Kadir, T. S. dan Yuriyah, S. 2011. Faktor Virulensi AvrBs3/PthA pada Ras III, Ras IV, Ras VIII, dan IXO93-068 Patogen Hawar Daun Bakteri (*Xanthomonas oryzae* pv. *oryzae*). *Jurnal Agro Biogen*. 7(1): 1-8. <https://doi.org/10.21082/jbio.v7n1.2011.p1-8>.
- Varghese, N. and Joy, P. P. 2014. *Microbiology laboratory manual*. Pineapple Research Station (Kerala Agricultural University), Vazhakulam-686 670, Muvattupuzha, Ernakulam, Kerala.
- Velusamy, P., Immanuel, J. E., Gnanamanickam, S. S. and Thomashow, L. 2006. Biological Control of Rice Bacterial Blight by Plant-Associated Bacteria Producing 2,4-diacetylphloroglucinol. *Canadian Journal of Microbiology*. 52(1): 56–65. <https://doi.org/10.1139/w05-106>.
- Verma, V., Joshi, K., & Mazumdar, B. (2012). Study of siderophore formation in nodule-forming bacterial species. *Research Journal of Chemical Sciences*. 2(11): 26-29.
- Vernoux, T., Besnard, F. and Traas, J. 2010. Auxin At the Shoot Apical Meristem. *Cold Spring Harbor Perspectives in Biology*, 2(4), 1-15. <https://doi.org/10.1101/cshperspect.a001487>.
- Vieira, S., Sikorski, J., Dietz, S., Herz, K., Schrumpf, M., Bruelheide, H., Schee, D., Friedrich, M. W. and Overmann, J. 2020. Drivers of the Composition of Active Rhizosphere Bacterial Communities in Temperate Grasslands. *ISME Journal*. 14(2): 463-475. <https://doi.org/10.1038/s41396-019-0543-4>

- Vikal, Y. and Bhatia, D. 2017. *Genetics and Genomics of Bacterial Blight Resistance In Rice*. Advances in International Rice Research. <https://doi.org/10.5772/67361>.
- Vinodhini, J., Kannan, R., Sankareswari, R. U., Akila, R. and Pillai, M. A. 2017. Characterization of New Bacterial Leaf Blight of Rice Caused by *Pantoea stewartii* subsp. Indologenes in Southern Districts of Tamil Nadu. *International Journal of Environment, Agriculture and Biotechnology*. 2(6): 3279-3284. <https://doi.org/10.22161/ijeab/2.6.64>.
- Vorholt, J. A. 2012. Microbial Life in the Phyllosphere. *Nature Reviews Microbiology*. 10(12): 828-840. <https://doi.org/10.1038/nrmicro2910>.
- Waghela, M. and Khan, S. 2018. Isolation, Characterization of Pigment Producing Bacteria from Various Food Samples and Testing of Antimicrobial Activity of Bacterial Pigments. *DAV International Journal of Science*. 7(1): 10.
- Wahyudi, A. T., Meliah, S. dan Nawangsih, A. A. 2011. *Xanthomonas oryzae* pv. *oryzae* Bakteri Penyebab Hawar Daun pada Padi: Isolasi, Karakterisasi, dan Telaah Mutagenesis dengan Transposon. *Makara, Sains*. 15(1): 89-96.
- Wandita, R. H., Pujiyanto, S., Suprihadi, A. dan Hastuti, R. 2018. Isolasi dan Karakterisasi Bakteri Endofit Pelarut Fosfat dan Penghasil Hidrogen Cyanide (HCN) dari Tanaman Bawang Merah (*Allium cepa L*). *Bioma*. 20(1): 9-16.
- Wartono, W., Giyanto, G. dan Mutaqin, K. H. 2015. Efektivitas Formulasi Spora *Bacillus subtilis* B12 sebagai Agen Pengendali Hayati Penyakit Hawar Daun Bakteri pada Tanaman Padi. *Jurnal Penelitian Pertanian Tanaman Pangan*. 34(1): 21-28. <https://doi.org/10.21082/jpptp.v34n1.2015.p21-28>.
- Wei, G., Kloepper, J. W. and Tuzun, S. 1991. Induction of Systemic Resistance of Cucumber to *Colletotrichum Orbiculare* by Select of Plant Growth-Promoting Rhizobacteria. *The American Phytopathological Society*. 81(12): 1508-1512.
- Wei, G., Kloepper, J. W. and Tuzun, S. 1996. Induced Systemic Resistance to Cucumber Diseases and Increased Plant Growth by Plant Growth-Promoting Rhizobacteria Under Field Conditions. *The American Phytopathology Society*. <https://doi.org/10.1094/Phyto-86-221>.

- Wicaksono, F. Y., Nurmala, T., Irwan, A. W. dan Putri, A. S. U. 2016. Pengaruh Pemberian Gibberellin dan Sitokinin pada Konsentrasi yang Berbeda Terhadap Pertumbuhan dan Hasil Gandum (*Triticum aestivum L.*) di Dataran Medium Jatinangor. *Kultivasi*. 15(1): 52-58. <https://doi.org/10.24198/kultivasi.v15i1.12004>.
- Widawati, S. and Suliasih, S. 2019. Role of Indigenous Nitrogen-fixing Bacteria in Promoting Plant Growth on Post Tin Mining Soil. *Makara Journal of Science*. 23(1): 28-38. <https://doi.org/10.7454/mss.v23i1.10801>.
- Widiantini, F., Herdiansyah, A. and Yulia, E. 2017. Biocontrol Potential of Endophytic Bacteria Isolated from Healthy Rice Plant Against Rice Blast Disease (*Pyricularia oryzae* Cav.). *KnE Life Sciences*. 2(6): 287-295. <https://doi.org/10.18502/cls.v2i6.1051>.
- Widyastuti, Y., Rumanti, I. A. dan Satoto. 2012. Perilaku Pembungaan Galur-Galur Tetua Padi Hibrida. *Iptek Tanaman Pangan*. 7(2): 67-78.
- Winarno, G. D., Harianto, S. P. dan Santoso, T. 2019. *Klimatologi Pertanian*. Pusaka Media. Bandar Lampung.
- Woźniak, M., Gałzka, A., Tyśkiewicz, R. and Jaroszuk-ścisieł, J. 2019. Endophytic Bacteria Potentially Promote Plant Growth by Synthesizing Different Metabolites and Their Phenotypic/Physiological Profiles in the Biolog Gen III Microplate™ test. *International Journal of Molecular Sciences*. 20(21): 24. <https://doi.org/10.3390/ijms20215283>.
- Wulandari, N., Irfan, M. dan Saragih, R. 2019. Isolasi dan Karakterisasi Plant Growth Promoting Rhizobacteria dari Rizosfer Kebun Karet Rakyat. *Jurnal Dinamika Pertanian*. 3: 57-64.
- Wulandari, P., Murdiono, W. E., and & Koesriharti. 2019. Pengaruh Dosis Plant Growth Promoting Rhizobacteria (PGPR) Terhadap Pertumbuhan dan Hasil Dua Varietas Selada Merah (*Lactuca sativa L.*). *Jurnal Produksi Tanaman*. 7(2): 283–290.
- Xu, Y., Zhu, X. F., Zhou, M. G., Kuang, J., Zhang, Y., Shang, Y. and, & Wang, J. X. (2010). Status of Streptomycin Resistance Development in *Xanthomonas oryzae* pv. *oryzae* and *Xanthomonas oryzae* pv. *oryzicola* in China and Their Resistance Characters. *Journal of Phytopathology*. 158(9): 601-608. <https://doi.org/10.1111/j.1439-0434.2009.01657.x>.

- Xuan, L. N. T., Dung, T. Van, Ngoc, H. N. and Diep, C. N. 2016. Isolation and Characterization of Rhizospheric Bacteria in Rice (*Oryza sativa* L.) Cultivated on Acid Sulphate Soils of the Mekong Delta, Vietnam. *World Journal of Pharmacy and Pharmaceutical Sciences.* 5(9): 343–358. <https://doi.org/10.20959/wjpps20169-7671>.
- Yadegari, M., Rahmani, H. A., Noormohammadi, G. and Ayneband, A. 2010. Plant Growth Promoting Rhizobacteria Increase Growth, Yield and Nitrogen Fixation in *Phaseolus vulgaris*. *Journal of Plant Nutrition.* 33: 1733-1743.
- Yahya, I., Advinda, L. dan Angraini, F. 2017. Isolasi dan Uji Aktivitas Antimikroba Bakteri Endofit dari Daun Salam (*Syzygium polyanthum* Wight). *BioScience.* 1(2): 62-69. <https://doi.org/10.24036/02017128074-0-00>.
- Yang, Z., Sun, X., Wang, S. and Zhang, Q. 2003. Genetic and Physical Mapping of a New Gene for Bacterial Blight Resistance in Rice. *Theor Appl Genet* (2003), 106. 1467-1472. <https://doi.org/10.1007/s00122-003-1205-4>.
- Yashitola, J., Thirumurugan, T., Sundaram, R. M., Naseerullah, M. K., Ramesha, M. S., Sarma, N. P. and Sonti, R. V. 2002. Assessment of Purity of Rice Hybrids Using Microsatellite and STS Markers. *Crop Science.* 42(4): 1369-1373. <https://doi.org/10.2135/cropsci2002.1369>.
- Yasmin, S., Hafeez, F. Y., Mirza, M. S., Rasul, M., Arshad, H. M. I., Zubair, M. and Iqbal, M. 2017. Biocontrol of Bacterial Leaf Blight of Rice and Profiling of Secondary Metabolites Produced by Rhizospheric *Pseudomonas aeruginosa* BRp3. *Frontiers in Microbiology.* 8: 23. <https://doi.org/10.3389/fmicb.2017.01895>.
- Yi, H. S., Yang, J. W. and Ryu, C. M. 2013. ISR Meets SAR Outside: Additive Action of the Endophyte *Bacillus pumilus* INR7 and the Chemical Inducer, Benzothiadiazole, on Induced Resistance Against Bacterial Spot in Field-Grown Pepper. *Frontiers in Plant Science.* 4: 1-12. <https://doi.org/10.3389/fpls.2013.00122>.
- Yuliani, D., Sudir, S. dan Mejaya, M. J. 2017. Komposisi dan Dominasi Patotipe *Xanthomonas oryzae* pv. *oryzae* Penyebab Hawar Daun Bakteri pada Tanaman Padi dengan Pola Tanam Tidak Serempak. *Jurnal Penelitian Pertanian Tanaman Pangan.* 1(2): 1330-142. <https://doi.org/10.21082/jpptp.v1n2.2017.p133-142>.

- Yuliani, D., Wening, R. H. dan Sudir. 2015. Karakterisasi Sifat Morfologi dan Ketahanan Terhadap Penyakit Hawar Daun Bakteri pada Beberapa Varietas Padi. *Penelitian Pertanian Tanaman Pangan*. 34(2), 121–130.
- Yulianti, T. 2013. Pemanfaatan Endofit sebagai Agensi Pengendali Hayati Hama dan Penyakit Tanaman. *Buletin Tanaman Tembakau, Serat & Minyak Industri*. 5(1): 40-49. <https://doi.org/10.21082/bultas.v5n1.2013.40-49>.
- Yuriyah, S. and Utami, D. W. 2015. Genetic Diversity of Indonesian Bacterial Leaf Blight Isolate (*Xanthomonas oryzae* pv. *oryzae*) Core collection Based on the VNTR and avrXa7 Molecular Markers. *Makara Journal of Science*. 19(3): 123-130. <https://doi.org/10.7454/mss.v19i3.4893>.
- Yuriyah, S., Utami, D. W. dan Hanarida, I. 2013. Uji Ketahanan Galur-Galur Harapan Padi Terhadap Penyakit Hawar Daun Bakteri (*Xanthomonas oryzae* pv. *oryzae*) Ras III, IV, dan VIII. *Buletin Plasma Nutfah*. 19(2): 53-60.
- Yurnaliza, Siregar, M. W. dan Priyani, N. 2011. Peran Bakteri Endofit Penghasil IAA (Indol Acetic Acid) Terseleksi Terhadap Pertumbuhan Tanaman Padi (*Oryza sativa* L). *Prosiding Seminar Nasional Biologi*. 219-228.
- Zamzami, A., Ilyas, S. dan Machmud, M. 2014. Perlakuan Agens Hayati untuk Mengendalikan Hawar Daun Bakteri dan Meningkatkan Produksi Benih Padi Sehat. *Jurnal Agron. Indonesia*. 42(1): 1-8.
- Zehnder, G. W., Yao, C., Murphy, J. F., Sikora, E. R. and Kloepper, J. W. 2000. Induction of Resistance in Tomato Against *Cucumber Mosaic Cucumovirus* by Plant Growth-Promoting Rhizobacteria. *BioControl*. 45(1): 127-137. <https://doi.org/10.1023/A:1009923702103>.
- Zhang, Y. 2004. *Biocontrol of Sclerotinia Stem Rot of Canola by Bacterial Antagonists and Study of Biocontrol Mechanisms Involved*. Science.
- Zimbro, M. J., Power, D. A., Miller, S. M., Wilson, G. E. and Johnson, J. A. 2009. *Difco & BBL Manual: Manual of microbiological culture media*. Second Edition. Becton, Dickinson and Company. <https://doi.org/10.1002/1521-3773>.
- Zuraidah. 2013. Pengujian Beberapa Bakteri Penghambat Pertumbuhan *Xanthomonas oryzae* pv. *oryzae* pada Tanaman Padi. *Jurnal Ilmiah Pendidikan Biologi, Biologi Edukasi*. 5(1): 18-24.

LAMPIRAN

Tabel Lampiran 1. Hasil analisis isolat bakteri rizosfer dan endofit berpotensi sebagai biostimulan, biofertilizer dan bioprotektan

Isolat Bakteri	Biostimulan			Biofertilizer			Boprotektan		
	IAA	GA3	Fosfat			Nitrogen	Siderofor		HCN
			K	IP	(EF %)		salisilat	katekol	
AHF1MS	0,508	3,008	9,298	1,61	2,61	0,14	7,860	14,555	+
AHF5MS	0,968	3,039	8,576	1,70	2,70	0,21	8,291	19,445	+
AHF10MS	0,873	3,432	7,592	1,41	2,41	0,23	8,469	14,740	+
AHE1MS	2,603	2,958	7,393	0,75	1,75	0,19	7,128	13,703	+
AHE7MS	1,095	3,038	6,717	1,72	2,72	0,27	6,391	16,148	+
AHE9MS	1,222	3,033	6,152	0,76	1,76	T	6,911	14,378	-
AHE15MS	0,476	3,061	9,942	0,90	1,90	T	5,810	10,584	+
AHR2MS	0,222	3,078	6,607	1,00	2,00	T	6,782	11,096	-
AHR3MS	0,905	3,066	9,099	0,93	1,93	T	9,011	15,818	+
AHR12MS	1,063	2,988	6,901	0,76	1,76	0,25	6,000	14,646	+
AHR15MS	0,492	2,854	9,597	0,96	1,96	T	7,458	11,115	-
AHR16MS	0,238	3,059	9,304	0,88	1,88	T	5,531	11,019	+
AHF5LS	0,349	3,113	9,822	1,29	2,29	0,24	9,045	13,665	+
AHF9LS	0,333	3,016	8,524	0,97	1,97	023	8,246	12,392	+
AHF11LS	2,714	3,223	7,225	1,27	2,27	T	6,335	10,507	-
AHF13LS	3,111	2,904	8,843	0,47	1,47	0,19	7,581	9,904	-
AHE11LS	1,746	2,928	8,639	1,20	2,20	T	7,324	15,359	+
AHE19LS	1,222	3,370	8,832	2,02	3,02	0,19	10,670	21,373	+
AHF3GS	1,317	3,162	5,503	1,27	2,27	T	2,486	8,445	+
AHF7GS	2,794	3,250	9,093	1,32	2,32	T	5,877	8,636	+
AHR1GS	1,254	3,331	9,042	0,88	1,88	0,19	7,603	30,904	+
AHR5GS	1,159	2,981	8,691	1,96	2,96	T	5,542	13,383	-
AHR8GS	7,127	2,982	10,534	0,53	1,53	0,24	7,721	15,804	+
AHR10GS	2,206	2,926	11,885	1,60	2,60	T	8,006	13,172	+
AHF5KS	0,317	3,002	9,571	0,80	1,80	T	7,352	13,737	+
AHF12KS	0,333	3,069	11,675	0,64	1,64	T	7,027	11,976	-
AHR1KS	5,857	3,051	8,822	1,19	2,19	T	5,441	10,053	+
AHR2KS	0,540	3,006	8,230	1,02	2,02	0,16	6,352	21,373	-

Keterangan: T = tidak diuji, + = reaksi positif, - = reaksi negatif

Tabel Lampiran 2a. Rata-rata tinggi tanaman padi (cm) umur 14 HST

Isolat Bakteri		Ulangan			Total	Rata-Rata
		I	II	III		
Kontrol	(B0)	15,30	4,20	5,10	24,6	8,20
AHF1MS	(B1)	18,00	18,70	19,30	56,0	18,67
AHF5MS	(B2)	15,10	18,40	15,90	49,4	16,47
AHF10MS	(B3)	16,10	16,40	15,00	47,5	15,83
AHE1MS	(B4)	16,40	15,90	18,80	51,1	17,03
AHE7MS	(B5)	16,80	15,00	16,00	47,8	15,93
AHE15MS	(B6)	5,00	16,00	5,10	26,1	8,70
AHR2MS	(B7)	18,20	13,90	18,00	50,1	16,70
AHR3MS	(B8)	21,00	20,70	17,20	58,9	19,63
AHR15MS	(B9)	12,80	14,06	15,00	41,9	13,95
AHR16MS	(B10)	15,40	12,40	14,20	42,0	14,00
AHF5LS	(B11)	13,00	12,10	14,40	39,5	13,17
AHF9LS	(B12)	16,40	17,20	15,20	48,8	16,27
AHF11LS	(B13)	6,30	14,10	6,00	26,4	8,80
AHF13LS	(B14)	13,30	10,50	12,00	35,8	11,93
AHE11LS	(B15)	12,10	17,20	11,00	40,3	13,43
AHE19LS	(B16)	20,20	18,00	16,60	54,8	18,27
AHF3GS	(B17)	4,60	16,10	18,80	39,5	13,17
AHF7GS	(B18)	4,90	12,50	17,10	34,5	11,50
AHR1GS	(B19)	4,80	17,10	16,80	38,7	12,90
AHR8GS	(B20)	11,10	7,90	6,50	25,5	8,50
AHR10GS	(B21)	12,00	11,10	12,30	35,4	11,80
AHF5KS	(B22)	5,50	19,10	11,50	36,1	12,03
AHF12KS	(B23)	18,20	19,40	17,20	54,8	18,27
AHR1KS	(B24)	19,60	13,20	18,10	50,9	16,97
AHR2KS	(B25)	16,90	23,60	15,60	56,1	18,70
Total		349,00	394,76	368,70	1112,46	370,82

Tabel lampiran 2b. Sidik ragam rata-rata tinggi tanaman padi 14 HST

SK	DB	JK	KT	F-hitung	F.Tabel	
					0,05	0,01
Perlakuan	25	13717,0	721,9	62,16**	1,834	2,357
Galat	52	499,5	11,6			
Total	77	14216,4				
KK			23,80%			

Keterangan: ** = sangat berpengaruh nyata

Tabel Lampiran 3a. Rata-rata panjang akar (cm) umur 14 HST

Isolat Bakteri		Ulangan			Total	Rata-Rata
		I	II	III		
Kontrol	(B0)	12,90	5,70	11,90	30,5	10,17
AHF1MS	(B1)	6,70	12,30	5,90	24,9	8,30
AHF5MS	(B2)	11,00	13,40	12,40	36,8	12,27
AHF10MS	(B3)	6,80	8,20	9,50	24,5	8,17
AHE1MS	(B4)	7,10	9,50	9,60	26,2	8,73
AHE7MS	(B5)	7,90	12,30	7,30	27,5	9,17
AHE15MS	(B6)	5,50	16,10	4,80	26,4	8,80
AHR2MS	(B7)	14,30	11,20	11,50	37,0	12,33
AHR3MS	(B8)	9,70	13,20	14,50	37,4	12,47
AHR15MS	(B9)	11,50	9,56	12,10	33,2	11,05
AHR16MS	(B10)	11,50	9,50	12,10	33,1	11,03
AHF5LS	(B11)	11,30	14,60	17,20	43,1	14,37
AHF9LS	(B12)	10,10	9,30	10,20	29,6	9,87
AHF11LS	(B13)	9,00	12,40	18,50	39,9	13,30
AHF13LS	(B14)	7,20	18,40	7,70	33,3	11,10
AHE11LS	(B15)	20,20	11,60	8,00	39,8	13,27
AHE19LS	(B16)	8,00	9,80	7,20	25,0	8,33
AHF3GS	(B17)	7,80	13,00	17,30	38,1	12,70
AHF7GS	(B18)	2,50	9,20	10,00	21,7	7,23
AHR1GS	(B19)	11,10	10,60	10,60	32,3	10,77
AHR8GS	(B20)	10,30	6,00	7,00	23,3	7,77
AHR10GS	(B21)	10,00	7,80	11,70	29,5	9,83
AHF5KS	(B22)	13,00	14,60	6,30	33,9	11,30
AHF12KS	(B23)	5,20	13,20	7,60	26,0	8,67
AHR1KS	(B24)	7,00	9,50	7,30	23,8	7,93
AHR2KS	(B25)	11,20	15,00	11,50	37,7	12,57
Total		248,80	295,96	269,70	814,46	271,49

Tabel Lampiran 3b. Sidik ragam rata-rata panjang akar (cm) 14 HST

SK	DB	JK	KT	F-hitung	F.Tabel	
					0,05	0,01
Perlakuan	25	13717,0	721,9	62,16**	1,834	2,357
Galat	52	499,5	11,6			
Total	77	14216,4				
KK			23,80%			

Keterangan: ** = berpengaruh sangat nyata

Tabel Lampiran 4a. Rata-rata bobot segar tanaman (g) umur 14 HST

Isolat Bakteri		Ulangan			Total	Rata-Rata
		I	II	III		
Kontrol	(B0)	0,16	0,15	0,14	0,45	0,15
AHF1MS	(B1)	0,13	0,17	0,19	0,49	0,16
AHF5MS	(B2)	0,08	0,08	0,11	0,27	0,09
AHF10MS	(B3)	0,11	0,13	0,19	0,43	0,14
AHE1MS	(B4)	0,14	0,16	0,15	0,45	0,15
AHE7MS	(B5)	0,20	0,12	0,14	0,46	0,15
AHE15MS	(B6)	0,07	0,16	0,12	0,35	0,12
AHR2MS	(B7)	0,16	0,11	0,16	0,43	0,14
AHR3MS	(B8)	0,14	0,20	0,13	0,47	0,16
AHR15MS	(B9)	0,16	0,12	0,16	0,44	0,15
AHR16MS	(B10)	0,17	0,17	0,10	0,44	0,15
AHF5LS	(B11)	0,12	0,13	0,14	0,39	0,13
AHF9LS	(B12)	0,15	0,15	0,15	0,45	0,15
AHF11LS	(B13)	0,13	0,12	0,12	0,37	0,12
AHF13LS	(B14)	0,11	0,10	0,15	0,36	0,12
AHE11LS	(B15)	0,08	0,24	0,06	0,38	0,13
AHE19LS	(B16)	0,15	0,12	0,23	0,50	0,17
AHF3GS	(B17)	0,11	0,12	0,18	0,41	0,14
AHF7GS	(B18)	0,06	0,10	0,13	0,29	0,10
AHR1GS	(B19)	0,11	0,12	0,17	0,40	0,13
AHR8GS	(B20)	0,19	0,06	0,11	0,36	0,12
AHR10GS	(B21)	0,09	0,13	0,14	0,36	0,12
AHF5KS	(B22)	0,14	0,14	0,10	0,38	0,13
AHF12KS	(B23)	0,14	0,17	0,10	0,41	0,14
AHR1KS	(B24)	0,12	0,19	0,19	0,50	0,17
AHR2KS	(B25)	0,15	0,20	0,15	0,50	0,17
Total		3,37	3,66	3,71	10,74	3,58

Tabel Lampiran 4b. Sidik ragam bobot segar tanaman (g) 14 HST

SK	DB	JK	KT	F-hitung	F.Tabel	
					0,05	0,01
Perlakuan	25	1,2	0,1	44,91**	1,834	2,357
Galat	52	0,1	0,0			
Total	77	1,3				
KK		27,5%				

Keterangan: ** = berpengaruh sangat nyata

Tabel Lampiran 5a. Rata-rata bobot kering tanaman (g) umur 14 HST

Isolat Bakteri		Ulangan			Total	Rata-Rata
		I	II	III		
Kontrol	(B0)	0,05	0,02	0,03	0,1	0,03
AHF1MS	(B1)	0,05	0,05	0,05	0,2	0,05
AHF5MS	(B2)	0,04	0,06	0,04	0,1	0,05
AHF10MS	(B3)	0,04	0,05	0,05	0,1	0,05
AHE1MS	(B4)	0,03	0,04	0,04	0,1	0,04
AHE7MS	(B5)	0,03	0,05	0,05	0,1	0,04
AHE15MS	(B6)	0,01	0,05	0,02	0,1	0,03
AHR2MS	(B7)	0,04	0,03	0,05	0,1	0,04
AHR3MS	(B8)	0,04	0,01	0,04	0,1	0,03
AHR15MS	(B9)	0,03	0,05	0,04	0,1	0,04
AHR16MS	(B10)	0,05	0,05	0,03	0,1	0,04
AHF5LS	(B11)	0,04	0,02	0,03	0,1	0,03
AHF9LS	(B12)	0,05	0,05	0,05	0,2	0,05
AHF11LS	(B13)	0,05	0,04	0,03	0,1	0,04
AHF13LS	(B14)	0,04	0,02	0,04	0,1	0,03
AHE11LS	(B15)	0,04	0,04	0,02	0,1	0,03
AHE19LS	(B16)	0,03	0,03	0,03	0,1	0,03
AHF3GS	(B17)	0,03	0,04	0,06	0,1	0,04
AHF7GS	(B18)	0,03	0,04	0,03	0,1	0,03
AHR1GS	(B19)	0,02	0,05	0,04	0,1	0,04
AHR8GS	(B20)	0,04	0,02	0,02	0,1	0,03
AHR10GS	(B21)	0,01	0,02	0,04	0,1	0,02
AHF5KS	(B22)	0,04	0,05	0,02	0,1	0,04
AHF12KS	(B23)	0,05	0,04	0,04	0,1	0,04
AHR1KS	(B24)	0,05	0,04	0,04	0,1	0,04
AHR2KS	(B25)	0,04	0,07	0,04	0,2	0,05
Total		0,97	1,03	0,97	2,97	0,99

Tabel Lampiran 5b. Sidik ragam bobot kering tanaman (g) 14 HST

SK	DB	JK	KT	F-hitung	F.Tabel	
					0,05	0,01
Perlakuan	25	0,1	0,0	40,28**	1,834	2,357
Galat	52	0,0	0,0			
Total	77	0,1				
KK			29,30%			

Keterangan: ** = berpengaruh sangat nyata

Lampiran 6. Deskripsi Tanaman Padi Varietas Inpari 38

DESKRIPSI VARIETAS INPARI 38

Asal seleksi	: IR688886B/BP68*10/Selegreng/Guarani/Asahan
Umur tanaman	: ± 115 hari setelah sebar
Bentuk tanaman	: Tegak
Tinggi tanaman	: ± 94 cm
Daun bedera	: Tegak
Bentuk gabah	: Medium berbulu pendek
Warna Gabah	: Kuning bersih
Kerontokan	: Sedang
Kerabahan	: Toleran
Tekstur nasi	: Pulen
Kadar amilosa	: ± 20,9 %
Berat 1000 butir	: ± 24,85 gram
Rata-rata hasil	: ± 5,71 t/ha GKG
Potensi hasil	: 8,16 t/ha GKG
Ketahanan terhadap	
1. Hama	: Agak rentan terhadap wereng batang coklat biotipe 1, 2 dan 3.
2. Penyakit	: Agak tahan terhadap hawar daun bakteri strain III, rentan hawar daun bakteri strain IV dan VIII. Tahan terhadap penyakit blas 073, agak tahan blas ras 033, 133, dan 173. Rentan terhadap virus tungro.
Anjuran tanam	: Agak toleran kekeringan serta cocok ditanam di daerah ekosisitem sawah irigasi dan dataran rendah tada hujan sampai ketinggian 600 mdp.
Tahun dilepas	: 2015

SK Menteri Pertanian: 711/Kpts/TP.030/12/2015

Tanggal 15 Desember 2015

Sumber: Deskripsi Varietas Unggul Baru Padi, Badan Penelitian dan Pengembangan Pertanian Kementerian Pertanian 2018

Lampiran 7. Deskripsi Tanaman Padi Varietas Inpari 39

DESKRIPSI VARIETAS INPARI 39

Asal seleksi	: BP342B-MR-1-3/Dendang//IR69502-6SKM-UBN-1-B1
Umur tanaman	: ± 115 hari setelah sebar
Bentuk tanaman	: Tegak
Tinggi tanaman	: ± 98 cm
Daun bedera	: Tegak
Bentuk gabah	: Medium
Warna Gabah	: Kuning bersih
Kerontokan	: Sedang
Kerabahan	: Toleran
Tekstur nasi	: Pulen
Kadar amilosa	: ± 20,2 %
Berat 1000 butir	: ± 26,85 gram
Rata-rata hasil	: ± 5,89 t/ha GKG
Potensi hasil	: 8,45 t/ha GKG
Ketahanan terhadap	
3. Hama	: Agak rentan terhadap wereng batang coklat biotipe 1, 2 dan 3.
4. Penyakit	: Agak tahan terhadap hawar daun bakteri strain III, rentan hawar daun bakteri strain IV dan VIII. Tahan penyakit blas 073, ras 033, 133, dan 173. Rentan terhadap virus tungro.
Anjuran tanam	: Agak toleran kekeringan serta cocok ditanam di daerah ekosistem sawah irigasi dan dataran rendah tada hujan sampai ketinggian 600 mdp.
Tahun dilepas	: 2015

SK Menteri Pertanian: 712/Kpts/TP.030/12/2015

Tanggal 15 Desember 2015

Sumber: Deskripsi Varietas Unggul Baru Padi, Badan Penelitian dan Pengembangan Pertanian Kementerian Pertanian 2018

Lampiran 8. Deskripsi Tanaman Padi Varietas Inpari 42

DESKRIPSI VARIETAS INPARI 42

Asal seleksi	: Huangxinzhan/Fenghuazhan
Umur tanaman	: ± 112 hari setelah sebar
Bentuk tanaman	: Tegak
Tinggi tanaman	: ± 93 cm
Daun bedera	: Tegak
Bentuk gabah	: Ramping
Warna Gabah	: Kuning jerami
Kerontokan	: Medium
Kerabahan	: Tahan
Tekstur nasi	: Pulen
Kadar amilosa	: ± 18,84 %
Berat 1000 butir	: ± 24,41 gram
Rata-rata hasil	: ± 7,11 t/ha GKG
Potensi hasil	: 10,58 t/ha GKG
Ketahanan terhadap	
5. Hama	: Agak rentan terhadap wereng batang coklat biotipe 1, dan 2 dan 3.
6. Penyakit	: Agak tahan terhadap hawar daun bakteri strain III, rentan strain IV dan agak rentan strain VIII. Tahan terhadap penyakit blas daun 073, agak tahan terhadap ras 033, dan rentan terhadap ras 133 dan 173.
Anjuran tanam	: Anjuran tanam di lahan sawah dengan ketinggian 0-600 m.
Tahun dilepas	: 2016

SK Menteri Pertanian: 372/Kpts/TP.010/6/2016

Tanggal 10 Juni 2016

Sumber: Deskripsi Varietas Unggul Baru Padi, Badan Penelitian dan Pengembangan Pertanian Kementerian Pertanian 2018