

## DAFTAR PUSTAKA

- Abidin, Z., L. Q. Aini dan A. L. Abadi. 2015. Pengaruh Bakteri *Bacillus* sp. dan *Pseudomonas* sp. terhadap Pertumbuhan Jamur Patogen *Sclerotium rolfsii* Sacc. Penyebab Penyakit Rebah Semai pada Tanaman Kedelai. *Jurnal Hama dan Penyakit Tumbuhan*, 3: 1-10.
- Adesegun, E., E. Ajayi, O. Adebayo, A. Akintokun and O. Enikuomihin. 2012. Effect of *Ocimum gratissimum* (L.) and *Aframomum melegueta* (K. Schum.) Extracts on the Growth of *Sclerotium rolfsii* Sacc.. *International Journal of Plant Pathology*, 3: 74-81.
- Aisyah, S. N., H. Harnas, S. Sulastri, R. Retmi, H. Fuaddi, F. Fatchiyah, A. Bakhtiar and J. Jamsari. 2016. Enhancement of a Novel Isolate of *Serratia plymuthica* as Potential Candidate for an Antianthraxnose. *Pakistan Journal of Biological Sciences* 19: 250-258.
- Aisyah, S. N., S. Sulastri, R. Retmi, R. H. Yani, E. Syafriani, L. Syukriani, F. Fatchiyah, A. Bakhtiar and J. Jamsari. 2017. Suppression of *Colletotrichum gloeosporioides* by Indigenous Phyllobacterium and its Compatibility with Rhizobacteria. *Asian Journal of Plant Pathology* 11: 139-147.
- Antoun, H. and J. W. Kloepper. 2001. Plant Growth Promoting Rhizobacteria (PGPR). In: Brenner S, Miller JH (Eds.), *Encyclopedia of Genetics*. Academic Press 1477-1480.
- Aqeel, B. M. and D. M. Umar. 2010. Effect of Alternative Carbon and Nitrogen Sources on Production of Alpha-amylase by *Bacillus megaterium*. *World Applied Sciences Journal* 8: 85-90.
- Ashwini, N. and S. Srividya. 2014. Potentiality of *Bacillus subtilis* as Biocontrol Agent for Management of Anthracnose Disease of Chili Caused by *Colletotrichum gloeosporioides* OGC1. *3 Biotech* 4: 127-136.
- Basha, S. and K. Ulaganathan. 2002. Antagonism of *Bacillus* species (Strain BC121) towards *Curvularia lunata*. *Current Science* 82: 1457-1463.
- Benhamou, N., S. Gagné, D. Le Quéré and L. Dehbi. 2000. Bacterial-Mediated Induced Resistance in Cucumber: Beneficial Effect of the Endophytic Bacterium *Serratia plymuthica* on the Protection against Infection by *Pythium ultimum*. *Phytopathology* 90: 45-56.
- Berg, G., K. Opelt., C. Zachow., J. Lottmann., M. Gotz., R. Costa and K. Smalla. 2006. The Rhizosphere Effect on Bacteria Antagonistic towards the Pathogenic Fungus *Verticillium* Differs Depending on Plant Species and Site. *FEMS Microbiology Ecology* 56: 250-261.
- Bhattacharyya, B. K., S. C. Pal and S. K. Sen. 1998. Antibiotic Production by *Streptomyces hygroscopicus* D-1.5: Cultural Effect. *Revista de Microbiologia* 29: 1-4.

- Brader, G., S. Compant., B. Mitter., F. Trognitz and A. Sessitsch. 2014. Metabolic Potential of Endophytic Bacteria. *Current Opinion in Biotechnology* 27: 30-37.
- Brurberg, M. B., B. Synstad, S. S. Klemsdal, D. M. van Aalten, L. Sundheim and V. G. H. Eijsink. 2001. Chitinases from *Serratia marcescens*. *Recent Research Development in Microbiology* 5: 187-204.
- Chakrabarti, S. and A. L. Chandra. 1982. A New *Streptomyces* and a New Polyene Antibiotic Actin. *Folia Microbiologica* 27: 167-172.
- Cook R. J. and K. F. Baker. 1983. The Nature and Practice of Biological Control of Plant Pathogens. *American Phytopathological Society* 6: 539.
- Costa, E., N. Teixido, J. Usall, E. Amares and I. Vinas. 2002. The Effect of Nitrogen and Carbon Sources on Growth of the Biocontrol Agent *Pantoea agglomerans* Strain CPA-2. *Letters in Applied Microbiology* 35: 117-120.
- de Vleeschauwer, D. and M. Hofte. 2007. Using *Serratia plymuthica* to control fungal pathogens of plant. *CAB Review* 46: 1-12.
- El-Banna N. M. A. 2006. Effect of Carbon Sources on the Antimicrobial Activity of *Corynebacterium kutscheri* and *Corynebacterium xerosis*. *African Journal of Biotechnology* 5: 833-835.
- El Khaldi, R., M. Daami-Remadi and M. Cherif. 2016. Biological Control of Stem Canker and Black Scurf on Potato by Date Palm Compost and its Associated Fungi. *Journal of Phytopathology* 164: 40-51.
- Farhana, M. S. N., M. R. Bivi and A. Khairulmazmi. 2011. Effect of Carbon Source on Bacterial Production of Metabolites Against *Fusarium oxysporum* and *Colletotrichum gloeosporioides*. *International Journal of Agriculture & Biology* 13: 1-8.
- Frankowski, J., M. Lorito, F. Scala, R. Schmid, G. Berg and H. Bahl. 2001. Purification and Properties of Two Chitinolytic Enzymes of *Serratia plymuthica* HRO-C48. *Archives of Microbiology* 176: 421-426.
- Fuaddi, H. 2016. Efektivitas Formulasi Senyawa Ekstraseluler dan Intraseluler Bakteri Isolat UBCR\_12 dalam Menekan Jamur *Colletotrichum gloeosporioides* secara *in-vitro*. Skripsi. Padang. Universitas Andalas. 54 Hal.
- Gebreel, H. M., A. A. El-Mahalawy, I. N. El-Kholy, H. M. Rifaat and A. A. Humid. 2008. Antimicrobial Activities of Certain Bacteria Isolated from Egyptian Soil against Pathogenic Fungi. *Research Journal of Agriculture and Biological Science* 4: 331-339.
- Gesheva, V., V. Ivanova and R. Gesheva. 2005. Effects of Nutrients on the Production of AK-111-81 Macrolide Antibiotic by *Streptomyces hygroscopicus*. *Microbiological Research* 160: 243-248.
- Gkarmiri, K., R. D. Finlay, S. Alström, E. Thomas, M. A. Cubeta and N. Högberg. (2015). Transcriptomic Changes in the Plant Pathogenic Fungus *Rhizoctonia solani* AG-3 in Response to the Antagonistic Bacteria *Serratia proteamaculans* and *Serratia plymuthica*. *BMC genomics* 16: 630.

- Harnas, H. 2015. Analisis Protein Diferensial Aktivitas Antagonis Bakteri UBCR\_12 terhadap Jamur *Colletotrichum gloeosporioides* pada Berbagai Sumber Nutrisi Nitrogen dan Karbon. [Thesis]. Padang Universitas Andalas, Padang. 90 hal.
- Hazeena, S. H., P. Binod and A. Pandey. 2019. Response surface Modeling and Optimization of Culture Media in Fermentative Production of 2, 3 Butanediol. *Renewable Energy*, 98: 216-220.
- Heydari, A. and M. Pessarakli, 2010. A Review on Biological Control of Fungal Plant Pathogens using Microbial Antagonists. *Journal of Biological Sciences* 10: 273-290.
- Houdt R. V., P. Moons, A. Jansen, K. Vanoirbeek, C. W. Michiels. 2005. Genotypic and Phenotypic Characterization of a Biofilm-Forming *Serratia plymuthica* Isolate from a Raw Vegetable Processing Line. *FEMS Microbiology Letters* 246: 265–272.
- Huang, Chien-Jui, T. Wang, S. Chung and C. Chen. 2005. Identification of an Antifungal Chitinase from a Potential Biocontrol Agent, *Bacillus cereus* 28-9. *Journal of Biochemistry and Molecular Biology* 38: 82-88.
- Islam, M. R., Y. T. Jeong, Y. S. Lee and C. H. Song. 2012. Isolation and Identification of Antifungal Compound from *Bacillus subtilis* C9 Inhibiting the Growth of Plant Pathogenic Fungi. *Mycobiology* 40: 59-66.
- Jacob, J., N. K. Sasidharan, G. V. Nisha, A. Asha and R. S Sreerag. 2014. Influence of Six Nitrogen Sources with Fructose on Antimicrobial Metabolite Production by Bacterium Associated with Entomopathogenic Nematode. *International Journal of Pharmacy and Pharmaceutical Sciences* 6: 299-304.
- James, P. D. A. and C. Edwards. 1988. The Effect of Cultural Conditions on Growth and Secondary Metabolism in *Streptomyces thermoviolaceus*. *FEMS Microbiology Letters* 52: 1–5.
- Jimtha, C. John, P. Jishma, S. Sreelekha, S. Chithra and E. K. Radhakrishnan. 2017. Antifungal Properties of Prodigiosin Producing Rhizospheric *Serratia spp.* *Rhizosphere* 3: 105-108.
- Kamensky, M., M. Ovadis, I. Chet and L. Chernin. 2003. Soil-Borne strain IC14 of *Serratia plymuthica* with Multiple Mechanisms of Antifungal Activity Provides Biocontrol of *Botrytis cinerea* and *Sclerotinia sclerotiorum* Disease. *Soil Biology and Biochemistry* 35: 323-331.
- Kotake, C., T. Yamasaki, T. Moriyama, M. Shinoda, N. Komiyama, T. Furumai, M. Konishi and T. Oki. 1992. Butyrolactols A and B, New Antifungal Antibiotics. *Journal of Antibiotics* 45: 1442–1450.
- Kurbanoglu, E. B., M. Ozdal., O .G. Ozdal and O. F. Algur. 2015. Enhanced Production of Prodigiosin by *Serratia marcescens* MO-1 using Ram Horn Peptone. *Braz. Journal of Microbiology* 46: 631-637.

- Kurze, S., H. Bahl, R. Dahl and G. Berg. 2001. Biological Control of Fungal Strawberry Diseases by *Serratia plymuthica* HRO-C48. *Plant Disease* 85: 529-534.
- Laksmi, N. D. 2000. Aktivitas Organisme Filoplan dengan Senyawa Biopolimer untuk Pengendalian *Alternaria porri* (Ellis) Cif. pada Bawang Merah. [Skripsi] Fakultas Pertanian, IPB, Bogor. 24 hal.
- Lee, S. Youn, H. Tindwa, Y. S. Lee, K. W. Naing, S. H. Hong, Y. Nam and K. Y. Kim. 2012. Biocontrol of Anthracnose in Pepper using Chitinase, Beta-1, 3 Glucanase, and 2-Furancarboxaldehyde Produced by *Streptomyces cavourensis* SY224. *Journal of Microbiology and Biotechnology* 22: 1359-1366.
- Liu, X., M. Bimerew, Y. Ma, H. Müller, M. Ovadis, L. Eberl, G. Berg and L. Chernin. 2007. Quorum-sensing Signaling is Required for Production of the Antibiotic Pyrrolnitrin in a Rhizospheric Biocontrol Strain of *Serratia plymuthica*. *FEMS Microbiology Letters* 270: 299-305.
- Masschelein, J., W. Mattheus, L. Gao, P. Moons, R. Van Houdt, B. Uytterhoeven, C. Lamberigts, E. Lesclinier, J. Rozenski, P. Herdewijn, A. Aertsen, C. Michiels, R. Lavigne. 2013. A PKS/NRPS/FAS Hybrid Gene Cluster from *Serratia plymuthica* RVH1 Encoding the Biosynthesis of Three Broad Spectrum, Zeamine Related Antibiotics. *PLoS ONE*. 8: 0054143.
- Mukerji, K. and A. Ciancio. 2007. Mycorrhizae in the Integrated Pest and Disease Management. *General Concepts in Integrated Pest and Disease Management*, 1: 245-266.
- Muller, H., C. Westendorf, E. Leitner, L. Chernin, K. Riedel, S. Schmidt, L. Eberl and G. Berg. 2009. Quorum-Sensing Effects in the Antagonistic Rhizosphere Bacteria *Serratia plymuthica* HRO-C48. *FEMS Microbiology Ecology* 67: 468-478.
- Nasikhah, K. 2008. Pengaruh Isolat Alami *Pseudomonas fluorescens* pada beberapa Tingkat Pengenceran terhadap Jamur *Sclerotium rolfsii* Penyakit Layu pada Kedelai (*Glycine max* (L) Merrill). Thesis: Universitas Islam Negeri Maulana Malik Ibrahim: 65 hal.
- Netzker, T., J. Fischer, J. Weber, D. J. Mattern, C. C. Koenig, V. Validate., V. Schroeck and A. A. Brakhage. 2015. Microbial Communication Leading to the Activation of Silent Fungal Secondary Metabolite Gene Clusters. *Frontiers in Microbiology* 6: 299-311.
- Pal, K. K. and B. M. Gardener. 2006. Biological Control of Plant Pathogens. *The Plant Health Instructor* 2: 1117-1142.
- Partida-Martinez, L. P. and C. Hertweck. 2005. Pathogenic Fungus Harbours Endosymbiotic Bacteria for Toxin Production. *Nature* 437: 884-888.
- Petersen, F., T. Moerker., F. Vanzanella and H. H. Peter. 1994. Production of cladospiro-nebisepoxide, a New Fungal Metabolite. *The Journal of Antibiotics* 47: 1098-1103.

- Pranav, K., S. Singh, D. Dutta, S. Chaudhuri, S. Ganguly and L. Nain. 2014. Statistical of Media Components for Production of Fibrinolytic Alkaline Metalloproteases from *Xenorhabdus indica* KB-3. *Biotechnology Research international* 11 pages.
- Prapagdee, B., U. Akrapikulchart and S. Mongkolsuk. 2008. Potential of a Soil-Borne *Streptomyces hygroscopicus* for Biocontrol of Anthracnose Disease Caused by 14 *Colletotrichum gloeosporioides* in Orchid. *Journal of Biological Sciences* 8: 1187-1192.
- Prapagdee, B., C. Kuekulvong and S. Mongkolsuk. 2008. Antifungal Potential of Extracellular Metabolites Produced by *Streptomyces hygroscopicus* against Phytopathogenic Fungi. *International Journal of Biological Sciences* 4: 330-337.
- Qishlaqi, A. and F. Moore. 2007. Statistical Analysis of Accumulation and Sources of Heavy Metals Occurrence in Agricultural Soils of Khoshk River Banks, Shiraz, Iran. *American Eurasian Journal of Agricultural and Environmental Sciences*, 2: 565-573.
- Queiroz, B. P. V. and I. S. de Melo. 2006. Antagonism of *Serratia marcescens* towards *Phytophthora parasitica* and its Effects in Promoting the Growth of Citrus. *Brazilian Journal of Microbiology* 37: 448-450.
- Rakh, R., L. Raut, S. Dalvi and A. Manwar. 2011. Biological Control of *Sclerotium rolfsii*, Causing Stem Rot of Groundnut by *Pseudomonas cf. monteilii*. *Recent Research in Science and Technology*, 3: 2076-5061.
- Rizk, M., T. Abdel-Rahman and H. Metwally. 2007. Factors Affecting Growth and Antifungal Activity of Some *Streptomyces* Species against *Candida albicans*. *Journal of Food, Agriculture and Environment* 5: 446-449.
- Sanchez, S. and A. Demain. 2002. Metabolic Regulation of Fermentation Processes. *Enzyme Microbial Technology* 31: 895-906.
- Sanchez, S. 2005. The Bright and Promising Future of Microbial Manufacturing. *Current Opinion in Microbiology* 8: 229-233.
- Sanchez, S., A. Chavez., A. Forero., Y. Garcia-Huante., A. Romero., M. Sanchez., D. Rocha., B. Sanchez., M. Avalos., S. Gusman-Trampe., R. Rodriguez-Sanoja., E. Langley and B. Riuz. 2010. Carbon Source Regulation of Antibiotic Production. *Journal of Antibiotics* 63: 442-459.
- Santos, S. M., J. M. Carbajo and J. C. Villar. 2013. The Effect of Carbon and Nitrogen Source on Bacterial Cellulose Production and Properties from *Gluconacetobacter sucrofermentas* CECT 7291 Focused on its use in Degraded Paper Restoration. *BioResource* 8: 3630-3645.
- Santos, D. K. F., R. D. Rifino, J. M. Luna, V. A. Santos and L. A. Sarubbo. 2016. Biosurfactants: Multifunctional Biomolecules of the 21<sup>st</sup> Century. *International Journal of Molecular Science*, 17: 401-432.
- Semangun H. 2004. Penyakit-Penyakit Tanaman Hortikultura di Indonesia. Gadjah Mada University Press, Yogyakarta: 850 hal.

- Seyedsayamdost, R. M., S. Cleto, G. Carr, H. Vlamakis, M. J. Vieira, R. Kolter and J. Clardy. 2012. Mixing and Matching Siderophore Clusters: Structure and Biosynthesis of Serratiochelins from *Serratia* sp. *Journal of American Chemical Society* 134: 13550-13553.
- Slater, H., M. Crow, L. Everson and G. P. Salmond. 2003. Phosphate Availability Regulates Biosynthesis of Two Antibiotics, Prodigiosin and Carbapenem, in *Serratia* via Both Quorum-Sensing-Dependent and Independent Pathway. *Molecular Microbiology* 47: 303-320.
- Someya, N., N. Kataoka, T. Komagata, K. Hirayae, T. Hibi and K. Akutsu. 2000. Biological Control of Cyclamen Soilborne Diseases by *Serratia marcescens* strain B2. *Plant Disease* 84: 334-340.
- Soka, Y. S., S. Magdalena and D. Rachelia. 2012. The Genetic Diversity of Endophytic and Phyllosphere Bacteria from Several Indonesian Herbal Plants. *Journal of Science* 16: 39-45.
- Spize, J. and P. Tichy. 1995. Some Aspects of Overproduction of Secondary Metabolites. *Folia Microbiologica* 40: 43-50.
- Sulastri. 2016. Uji Potensi Antagonis Isolat Bakteri Penghasil Senyawa Antiantraknosa terhadap Beberapa Jamur Fitopatogen. [Tesis]. Padang. Universitas Andalas.
- Syafriani, E., F. Riwani, R. Kamelia, I. Ferita, F. Fatchiyah and J. Jamsari. 2016. A Promising Novel Rhizobacteria Isolate UBCR\_12 as Antifungal for *Colletotrichum gloeosporioides*. *Research Journal of Pharmaceutical, Biological and Chemical Sciences* 7: 2202-2209.
- Tomás, J., J. Árvay and T. Tóth. 2012. Heavy Metals in Productive Parts of Agricultural Plants. *The Journal of Microbiology, Biotechnology and Food Sciences*, 1: 819-827.
- Van Loon, L. C. 2007. Plant Responses to Plant Growth Promoting Rhizobacteria. *European journal of Plant Pathology* 119: 243-254.
- Wang, S. L., J. H. Peng, T. W. Liang, and K. C. Liu. 2008. Purification and Characterization of A Chitosanase from *Serratia marcescens* TKU011. *Carbohydrate Research* 343: 1316-1323.
- Wang, Y., X. Fang, F. An, G. Wang and X. Zhang. 2011. Improvement of Antibiotic Activity of *Xenorhabdus boydii* by Medium Optimization using Response Surface Methodology. *Microbial Cell Factories* 10: 98-113.
- Wei, B. and L. Yang. 2010. A Review of Heavy Metal Contaminations in Urban Soils, Urban Road Dusts and Agricultural Soils from China. *Microchemical Journal*, 94: 99-107.
- Whipps, J. M. 2011. Prospects and Limitations for *Mycorrhizas* in Biocontrol of Root Pathogens. *Canadian Journal of Botany* 82: 1198-1227.
- Wilson, B., H. Erdjument-Bromage, P. Tempst and B. R. Cairns. 2006. The RSC Chromatin Remodeling Complex Bears an Essential Fungal Specific Protein Module with Broad Functional Roles. *Genetics* 172: 795-809.

- Xiufen, Y., Y. Huaiwen., J. Heng and L. Zheng. 2001. Effect of Fermentation conditions on Antibiotic Production of *Xenorhabdus nematophilus* 28: 12-16.
- Xiufen, Y., Q. Dewen., J. Ninging., L. Zheng and Y. Jingjing. 2006. Cultural Medium and Fermentation Conditions of *Xenorhabdus sp.* strain D43. *Chinese Journal of Biological Control* 22: 58–62.
- Yani, R. H. 2012. Seleksi Bakteri Antagonis dari Tanaman Sawi (*Brassica juncea L*) sebagai Biofungisida terhadap *Colletotrichum gloeosporioides* Penyebab Antraknosa pada Tanaman Cabai (*Capsicum sp.*). [Skripsi]. Padang, Universitas Andalas.
- Yulfida, A. 2013. Penggunaan Beberapa Jamur Antagonis untuk Menekan Pertumbuhan Jamur *Sclerotium rolfsii* Sacc. Penyebab Penyakit Rebah Kecambah Bibit Cabe. *Pest Tropical Journal*, 1: 18-25.
- Yulia, E. and F, Widiyanti. 2007. Potensi Bakteri Antagonis Filoplan Daun Mangga dalam Menekan Penyakit Antraknosa Buah Mangga (*Mangifera indica L.*). *Jurnal Agrikultura* 18: 53-59.

