DAFTAR PUSTAKA

Abuamsha, R., Salman, M., Ehlers, R. U. 2011. Differential resistance of oil seed rape cultivars (*Brassicanapus* ssp. oleifera) to *Verticillium longisporum* is affected by rhizosphere colonisation with antagonistic bacteria, *Serratia plymuthica* and *Pseudomonas chlororaphis*. *Biological Control* 56: 101–112.

Agrios, G.N. 2005. Plant Pathology (5th edition). Elsevier-Academic Press, San Diego, CA.

Akila, R., Rajendran, L., Harish, S., Saveetha, K., Raguchander, T., Samiyappan, R. 2011. Combined application of botanical formulations and biocontrol agents for the management of *Fusarium oxysporum* f. sp. cubense (Foc) causing Fusarium wilt in banana. *Biological Control* 57 : 175–183.

Allan, C., Hadwiger, L.A. 1979. The fungicidal effect of chitosan on fungi of varying cell wall composition. *Exp. Mycol*. 3: 285–287.

Ambawade, M.S. and Pathade, G.R. 2015. Production of Indole Acetic Acid (IAA) by Stenotrophomonas maltophilia BE25 Isolated from Root of Banana (*musa spp*). International Journal of science and Research 4 : 2644-2650.

Baker, M.A., Robert O. Hall, Jr., Christopher, D. A., Benjamin J. K. 2007. Hydrologic control of nitrogen removal, storage, and export in a mountain stream. *Limnol. Oceanogr* 54(6) : 2128–2142.

Barber, M.S., Bertram, R.E., Ride, J.P. 1989. Chitin oligosaccharides elicit lignifications in wounded wheat leaves. *Physiol Mol Plant Pathol* 34 : 3-12.

Bell, A.A., Hubbard, J.C., Liu, L., Davis, R.M., Subbarao, K.V. 1998. Effects of chitin and chitosan on the incidence and severity of Fusarium yellows in celery. *Plant Dis.* 82 : 322–328.

Berger, A.L., Palik, B.J., D'Amato, A.W., Fraver, S., Bradford, J.B., Nislow, K., King, D., Brooks, R.T. 2013. Ecological impacts of energy-wood harvests: lessons from whole-tree harvesting and natural disturbance. J. For. 111 : 139–153.

Blomme, G., and Ortiz, R. 2000. Preliminary assessment of root systems morphology in Musa. In: Craenen, K., Ortiz, R., Karamura, E.B., &

Vuylsteke (Eds.) Proceedings of the International Conference on Banana and Plantain for Africa. Acta Horticurae No. 540 : 259-266, International Society for Horticultural Science (ISHS), Leuven, Belgium.

Borrero, C., Ordovas, J., Trillas, M.I., Aviles, M. 2006. Tomato fusarium wilt suppressiveness. The relationship between the organic plant growth media and their microbial communities as characterized by Biology. *Soil Biol. Biochem.* 38 : 1631–1637.

Bordiec, S., Sandra Paquis, He´ le` ne Lacroix, Sandrine Dhondt, Essaı¨d Ait Barka, Serge Kauffmann, Philippe Jeandet, Florence Mazeyrat-Gourbeyre1, Christophe Cle´ ment1, Fabienne Baillieul1 and Ste´ phan Dorey. 2010. Comparative analysis of defence responses induced by the endophytic plant *growth-promoting rhizobacterium Burkholderia phytofirmans* strain PsJN and the non-host bacterium *Pseudomonas syringae* pv. pisi in grapevine cell suspensions. Journal of Experimental Botany 29 : 1- 9.

Bowyer, P., Clarke, B.R., Lunness, P., Daniels, M.J., Osbourn, A. E. 1995. Host range of a plant pathogenic fungus determined by a saponin detoxifying enzyme. Science 267 (5196) : 371-374.

Bo Zhu, He Liu, Wen-Xiao Tian, Xiao-Ying Fan, Bin Li, Xue-Ping Zhou, Gu-Lei Jin, Guan-Lin Xiea. 2011. Genome Sequence of Stenotrophomonas maltophilia RR-10, Isolated as an Endophyte from Rice Root. *Journal ASM.org* 194 (5) : 1280-1281.

BPS. 2012. Production of fruit in Indonesia. BPS (On-Line). http://www.bps.go.id/sector/ Di akses tanggal 20 Juli 2012.

Buddenhagen, I.W., 2009. Understanding strain diversity in *Fusarium oxysporum* f. sp. *cubense* and history of introduction of ‘tropical race 4’ to better manage banana production. In: Jones D, Van Den Bergh I, eds. Proceedings of the International Symposium on Recent Advances in Banana Crop Protection for Sustainable Production and Improved Livelihoods, White River, South Africa. ISHS Acta Horticulturae 828 : 193–204.

Benhamou, N., Lafontaine, P.J., Nicole, M. 1994. Induction of systemicresistance to Fusarium crown and root rot in tomato plants by seed treatment with chitosan. *Phytopathology*. 84 : 1432–1444.

Chakravorty, S., Helb, D., Burday, M., Connel, N., Allan, D. 2007. A detailed analysis of 16S ribosomal RNA gene segments for the diagnosis of pathogenic bacteria. *J Microbiol Methods* 69(2) : 330–339.

Chang, W-t., Chen, M-l., Wang, S-l. 2010. An antifungal chitinase produced by *Bacillus subtilis* using chitin waste as a carbon source. *J Microbiol Biotechnol* 26 : 945–950.

Chae, D. H., Jin R. D., Hoon, H. B., Kim Y. W., Kiro, D.Y., Park, D., Khrisnan, H. B., Kim, K. Y. 2006. Control of late blight (*Phytophthora capsici*) in pepper plant with a compost containing multitude of chitinase-producing bacteria. *Biological Control* 51 : 339–351.

Chernin, L.S., Fuente, L.D.L., Sobolov, V., Haran, S., Vorgias, C.E., Oppenheim, A.B., Chet, I., 1997. Molecular cloning, structural analysis, and expression in Escherichia coli of a chitinase gene from Enterobacter agglomerans. *Appl. Environ. Microbiol*. 63 : 834-839.

Chet, I. 1987. Trichoderma - application, mode of action and potential as a biocontrol agent of soilborne plant pathogenic fungi. In Innovative Approaches to Plant Disease Control, pp. 137-160. Edited

Choorit, W., Patthanamanee, W., Manurakchinakorn, S. 2008. Use of response surface method for the determination of demineralization efficiency in fermented shrimp shells. Bioresour. Technol. 99 : 6168-6173.

Cohen-Kupiec R, Chet I. 1998. The molecular biology of chitin digestion. Curr Opin Biotechnol. 9(3) : 270-**27**7.

Compant, S., Duffy, B., Nowak, J., Clement, C., Barka, E. A. 2005. Use of plant growth-promoting bacteria for biocontrol of plant diseases principles, mechanisms of action, future and prospects. *Appl Environ Microbiol* 71 : 2951–4959.

Chung YC and Chen CY. 2008. Antibacterial characteristics and activity of acidsoluble chitosan. *Bioresour Technol* 99:2806–2814

Daly, A and Walduck, G. 2007. Fusarium Wilt of Banana (Panama Disease). www.nt.gov.au/dp.ifm. Diakses tanggal 20 Juli 2012.

Daniels J, Jenny C, Karamura D, Tomekpe K. 2001. Musalogue: a catalogue of Musa germplasm (International Network for the Improvement of Banana and Plantain, Montpellier 2001).

Debette, J and Blondeau, R. 1980. Presence of *Pseudomonas maltophilia* in the rhizosphere of several cultivated plants. *Can J Microbiol* 26: 460–463.

Departemen Pertanian. 2014. http://pusdatin.setjen.pertanian.go.id/tinymcpuk /file /pisang2014. Diakses tanggal 15 Agustus 2015.

Ding, C., Shen, Q., Zhang, R., Chen, W. 2012. Evaluation of rhizosphere bacteria and derived bio-organic fertilizers as potential biocontrol agents against bacterial wilt (*Ralstonia solanacearum*) of potato. *Plant Soil* 366 : 453-466.

Doares, S.H., Syrovets, T., Weiler, E.W., Ryan, C. A. 1995. Oligogalacturonides and chitosan activate plant defensive genes through the octadecanoid pathway. Proceedings of the National Academy of Science USA 92 : 4095-4098.

Dungan, R. S., Yates, S. R. & Frankenberger, W. T. 2003. Transformations of selenate and selenite by Stenotrophomonas maltophilia isolated from a seleniferous agricultural drainage pond sediment. *Environ. Microbiol*. 5 : 287–295.

El-Hassan, S.A. and Gowen, S.R. 2006. Formulation and delivery of the bacterial antagonist *Bacillus subtilis* for management of lentil vascular wilt caused *by Fusarium oxysporum* f. sp. lentis. *Phytopathology* 154 : 148–155.

El Hassni, M., El Hadrami, A., Daayf, F., Barka, E.A., El Hadrami, I., 2004. Chitosan, antifungal product against *Fusarium oxysporum* f. sp. albedinis and elicitor of defence reactions in date palm roots. *Phytopathol. Mediterr*. 43.

El-Katatny, M. H., Somitsch, W., Robra K. H., El-Katatny, M. S. and Gubitz, G. M. 2000. Production of chitinase and â-1,3-glucanase by *Trichoderma harzianum f*or control of the phytopathogenic fungus *Sclerotium rolfsii*. *Food Technology and Biotechnology* 38: 173–180.

Elvers, K. T., Leeming, K. & Lappin-Scott, H. M. 2001. Binary culture biofilm formation by *Stenotrophomonas maltophilia* and Fusarium oxysporum. J. Ind. Microbiol. *Biotechnol*. 26 : 178–183 (2001)

Esitken, A., Karlidag, H., Ercisli, S., Turan, M., Sahin, F. 2003. The effect of spraying a growth promoting bacterium on the yield, growth and nutrient element composition of leaves of apricot (*Prunus armeniaca* L. cv. Hacihaliloglu). Aust. J. Agric. Res. 54 : 377–380.

Esitken, A., Pirlak, L., Turan, M., Sahin, F. 2006. *Effects of floral and foliar application of plant growth promoting rhizobacteria (PGPR) on yield, growth and nutrition of sweet cherry*. *Sci Hort* 110:324–327

Fang, X., You M-p., Barbetti, M. J. 2012. Reduced severity and impact of Fusarium wilt on strawberry by manipulation of soil pH, soil organic amendments and crop rotation. *Eur J Plant Pathol* 134 : 619-629.

FAO. 2012. Overview of World Banana Production and Trade. http://www.fao.org/docrep/007/y5102e/ Di akses tanggal 20 Juli 2012

FAO. 2014. http://www.fao.org/docrep/019/i3627e/i3627e. Diakses tanggal 15 Agustus 2015

Freepons, D., 1991. Chitosan, does it have a place in agriculture? Proc. Plant Growth Regulators Soc. Am., 11–19.

Garcia-Bartniki, S. 1968. Cell Wall Chemistry, Morphogenesis, and Taxonomy of Fungi. Annual Review of Microbiology 22 : 87-108.

Giyanto, Suhendar, Ace, Rustam. 2009. Kajian Pembiakan Bakteri Kitinolitik Pseudomonas Fluorescens Dan Bacillus Sp. Pada Limbah Organik Dan Formulasinya Sebagai Pestisida Hayati (Bio-Pesticide) http:// repository. ipb.ac.id/ diakses tanggal 17 Agustus 2014

Gohel, V., Singh, A., Vimal, M., Ashwini, P., Chhatpar, H.S., 2006. Bioprospecting and antifungal potential of chitinolytic microorganisms. *Afr. J. Biotechnol*. 5, 54-72.

Gooday, G.W., Prosser, J.I., Hillman, K., Cross, M.G. 1991. Mineralization of chitin in an estuarine sediment: The importance of the chitosan pathway. *Biochem. Syst. Ecol*. 19: 395–400.

Guo, J-h., Qi, H-y., Guo, Y-h., Ge, H-l., Gong, L-y., Zhang, L-x., Sund, P-h. 2004. Biocontrol of tomato wilt by plant growth-promoting rhizobacteria. *Biological Control* 29 : 66–72.

Hadiwiyono. 2010. Blood bacterial wilt disease of banana: the distribution of pathogen in infected plant, symptoms, and potentiality of diseased tissues as source of infective inoculums. *J Bioscience* 3 : 112-117.

Hadwiger, L.A., Beckman, J. 1980. Chitosan as a component of pea-Fusarium solani interactions. *Plant Physiol*. 1980, 66, 205–211.

Hadwiger L. A. 2013. Multiple effects of chitosan on plant systems: solid science or hype. *Plant Sci.* 208 : 42–49 .

Harish, S., Kavino, M., Kumar, N., Balasubramanian, P., Samiyappan, R. 2009. Induction of defense-related proteins by mixtures of plant growth

promoting endophytic bacteria against Banana bunchy top virus. *Biological Control* 51 : 16-25.

Hermanto, C., Sutamto, A., Jumjunidang, Edison H.S., Danniels, J.W., O'Neil, W., Sinohin V.G., Molina, A.B., Taylor, A.B. 2011. Incidence and distribution of Fusarium wilt disease in indonesia', in van den bergh, I., Smith, M., Swennen, R., Hermanto, C (eds.) Proceeding, International ISHS-Promusa Symposium on Global Prespective on Asian Challenges. ISHS Acta Horticulture, 828 pp.

Hua, F., Wang, H.Q., Yi Li, Zhao, Y.C. 2013. Trans-membrane transport of n-octadecane by *Pseudomonas* sp. DG17. *Journal of Microbiology/the Microbiological Society of Korea* 51 (6): 791-799.

Huang, X., Nan Zhang, Xiaoyu Yong, Xingming Yang, Qirong Shen. 2012. Biocontrol of *Rhizoctonia solani* damping-off disease in cucumber with Bacillus pumilus SQR-N43. Microbiological Research 167 : 135–143.

Hsu, S.C., Lockwood, J.L. 1975. Powdered Chitin Agar as a Selective Medium for Enumeration of Actinomycetes in Water and Soil. *Appl. Microbiol* 29 : 422–426.

Inbar, J., Chet, I., 1991. Evidence that chitinase produced by Aeromonas caviae is involved in the biological control of soil-borne plant pathogens by this bacterium. *Soil. Biol. Biochem*. 23: 973-978.

Janda, J.M., Abbott, S.L. 2007. 16S rRNA Gene sequencing for bacterial identification in the diagnostic laboratory: Pluses, perils, and pitfalls.*J. Clin. Microbiol.* 45:2761-2764.

Joklik, W.F. & D.T. Smith. 1968. Microbiology. 15th ed. Prentice-Hall, Inc., New York: xviii +1120 hlm

Juhasz, A. L., Stanley, G. A. & Britz, M. L. 2000. Microbial degradation and detoxification of high molecular weight polycyclic aromatic hydrocarbons by Stenotrophomonas maltophilia strain VUN 10,003. *Lett. Appl. Microbiol*. 30 : 396–401.

Kai, M., Maria Haustein, Francia Molina, Anja Petri, Birte Scholz, Birgit Piechulla. 2009. Bacterial volatiles and their action potential. *Applied Microbiology and Biotechnology* 81 : 1001-1012.

Karamura, E, Frison, E., Karamura, D.A. and Sharrock, S. (1999) Banana Production systems in Eastern and Southern Africa. In: Banana and Food Security by Picq, C., Foure, E., Frison, E.A (Eds.) International Symposium, Douala, Cameroon, 10-14 November, 1998.

Kildea S., Ransbotyn V., Khan MR., Fagan B., Leonard G., Mullins E., Doohan FM..2008. *Bacillus megaterium* shows potential for the biocontrol of Septoriatritici blotch of wheat. *Biol Control* 47 : 37–45.

Kishore GK., Pande S .2007. Chitin-supplemented foliar application of chitinolytic Bacillus reduces severity of Botrytis gray mold disease in chickpea under controlled conditions. *Lett Appl Microbiol* 44: 98–105.

Kishore, G.K., Pande, S., Podile, A.R., 2005a. Chitin-supplemented foliarapplication of Serratia marcescens GPS 5 improves control of late leaf spot disease of groundnut by activating defence-related enzymes. J. *Phytopathol*. 153 : 169-173.

Kishore, G.K., Pande, S., Podile, A.R., 2005b. Biological control of late leaf spot of peanut (*Arachis hypogaea* L.) with chitinolytic bacteria. *Phytopathology* 95 : 1157-1165.

Kloepper, J.W., Ryu, C.M., Zhang, S., 2006. Induced systemic resistance and promotion of plant growth by Bacillus spp. *Phytopathology* 94 : 1259-1266.

Kumar, S. And Sudhindra, R. G. 2000. Efficiency of the Neighbor-Joining Method in Reconstructing Deep and Shallow Evolutionary Relationships in Large Phylogenies. *J Mol Evol* 51 : 544–553.

Lafontaine, J.P., Benhamou, N. 1996. Chitosan treatment: an emerging strategy for enhancing resistance of greenhouse tomato plants to infection by *Fusarium oxysporum*. sp. radicis-lycopersici. *Biocontrol Sci. Technol*. 6 : 111–124.

Lee, E. Y., Jun, Y. S., Cho, K. S. & Ryu, H. W. 2002. Degradation characteristics of toluene, benzene, ethylbenzene, and xylene by Stenotrophomonas maltophilia T3-c. *J. Air Waste Manage. Assoc*. 52 : 400–406.

Li, P., Ma, L., Feng, Y-l., Mo, M-h., Yang, F-x., Dai, H-f., Zhao, Y-x. 2012. Diversity and chemotaxis of soil bacteria with antifungal activity against Fusarium wilt of banana. *J Ind Microbiol Biotechnol* 39 (10) : 495-505.

Ling, N., Zhang, W., Tan, S., Huang, Q., Shen, Q. 2012. Effect of the nursery application of bioorganic fertilizer on spatial distribution of *Fusarium oxysporum* f. sp. niveum and its antagonistic bacterium in the rhizosphere of watermelon. *Appl. Soil Ecol* 59 : 13-19.

Ling, N., Zhang, W., Tan, S., Huang, Q., Shen, Q. 2012. Effect of the nursery application of bioorganic fertilizer on spatial distribution of *Fusarium oxysporum* f. sp. niveum and its antagonistic bacterium in the rhizosphere of watermelon. *Appl. Soil Ecol* 59 : 13-19.

Liselott A Svensson-Stadler, Sashka A Mihaylova, Edward R.B. Moore. 2011. *Stenotrophomonas* interspecies differentiation and identification by *gyrB* sequence analysis. FEMS microbiol Lett 327 : 15-24.

Logan NA., Berge O., Bishop AH., Busse HJ., De Vos P., Fritze D., Heyndrickx M., Ka¨mpfer P., Rabinovitch L., Salkinoja-Salonen MS., Seldin L., Ventosa A. 2009. Proposed minimal standards for describing new taxa of aerobic, endospore-forming bacteria. *J Syst Evol Microbiol* 59: 2114–2121.

Lugtenberg, B., Natalia Malfanova, Faina Kamilova, and Gabriele Berg. 2013. Plant growth promotion by microbes. Leiden university press.

Luo, J., Ran, W., Hu, J., Yang, X.M., Xu, Y.C., Shen, Q.R. 2010. Application of bio-organic fertilizer significantly affected fungal diversity of soils. *Soil Sci Soc Amer J* 74 : 2039–2048.

Mackie, A. 2007. Banana Blood Disease : Blood Disease Bacteria Exotic Threat to Western. www.agric.wa.gov.au. Diakses tanggal 25 Juli 2012.

Mak, C., Mohamed, A. A., Liew, K. W., Ho, Y. W. 2004. Early screening technique for Fusarium wilt resistance in banana micro-propagated plants. http://www. Fao.org/docrep/007/ae216e/ae216eOK.htm. Banana Improvement. Diakses tanggal 15 Juli 2012.

Mbega, E. R., E. G. Wulff, R. B. Mabagala, J. Adriko, O. S. Lund, C. N. Mortensen. 2012. Xanthomonads and other yellow-pigmented Xanthomonas-like bacteria associated with tomato seeds in Tanzania. *African Journal of Biotechnology* 11(78) : 14303-14312.

Melodi, M. A. 2012. Government plans to produce Panama disease-free banana seedlings soon. http://mb.com.ph/node/346948/govt-plan. Diakses tanggal 28 Juli 2012.

Metcalfe AC, Krsek M, Gooday GW, Prosser JI, Wellington EMH. (2002). Molecular analysis of a bacterial chitinolytic community in an upland pasture. *Appl Environ Microbiol* 68 : 5042–5050.

Moebius, N., Zerrin Üzüm, Jan Dijksterhuis, Gerald Lackner, Christian Hertweck. 2014. Active invasion of bacteria into living fungal cells. Microbiology and infectious Disease 3 : 1-20. DOI: 10.7554/eLife.03007

Mubarik, N. R., Mahagiani, I., Anindyaputri, A., Santoso, S., Rusmana, I. 2010. Chitinolytic Bacteria Isolated from Chili Rhizosphere: Chitinase Characterization and Its Application as Biocontrol for Whitefly (*Bemisia tabaci* Genn.). *American Journal of Agriculture and Biological sciences* 5(4) : 430-435.

Murphy, J.G., Rafferty, S.M., Cassells, A.C. 2000. Stimulation of wild strawberry (Fragaria vesca) arbuscular mycorrhizas by addition of shellfish waste to the growth substrate: interaction between mycorrhization, substrate amendment and susceptibility to red core (*Phytophthora fragariae*). *Appl. Soil Ecol*. 15 : K.G. Nair, A. Dufresne, Crab shell chitin whisker reinforced natural rubber nanocomposites.

Nair, K. G. and Dufresne, A. 2003. Crab shell chitin whisker reinforced natural rubber nanocomposites. Processing and swelling behavior. *Biomacromolecules* 4 : 657-665.

No, H.K., Young, P.N., Ho, L.S., Meyers, S.P. 2002. Antibacterial activity of chitosans and chitosan oligomers with different molecular weights. *Int. Food Microbiol.* 74 : 65–72.

No, H. K. And Hur, E. Y. 1998. Control of Foam Formation by Antifoam during Demineralization of Crustacean Shell in Preparation of Chitin. *J. Agric. Food Chem.* 46 : 3844-3846.

Palleroni, N.J and Bradbury, J.F. 1993. *Stenotrophomonas*, a New Bacterial Genus for maltophilia (Hugh 1980) Swings et al. *Xanthornonas* 1983. International Journal of systematic bacteriology 43 (3) : 606-609.

Park, R.D., Jo, K.J., Jo, Y.Y., Jin, Y.L., Kim, K.Y., Shim, J.H. and Kim, Y.W. .2002. Variation of antifungal activities ofchitosans on plant pathogens. *J Microbiol Biotechnol* 12 : 84–88.

Patil, R.S., Ghormade V., and Deshpande, M.V. 2000. Chitinolytic enzymes: an exploration. *Enzyme Microbiol. Technol*. 26: 473–483.

Pegg K, G., Shivas RG, Moore NY, Bentley S (1995) Characterization of a unique population of Fusarium oxysporum f. sp. cubense causing Fusarium Wilt in cavendish bananas at Carnarvon, Western Australia. *Australian Journal of Agricultural Research* 46 : 167-178.

Ploetz R.C. and K.G. Pegg. 2000. Fungal diseases of the root, corm and pseudostem. In: D.R. Jones ((ed). Diseases of Banana, Abaca, and Enset. CABI Publishing. Walling fort-UK. pp. 143-172.

Pleban, S., Chernin, L. and Chet, I. 1997. Chitinolytic activity of an endophytic strain of *Bacillus cereus*. Lett. Appl. Microbiol, 25 : 284-288.

Pujiyanto, S., D.A. Santosa dan M.T. Suhartono. 2002. Kloning shotgun gen penyandi enzim kitinase dari isolat kitinolitik ICBB232 asal ekosistem air hitam, Kalimantan Tengah. *Bioma*. 4: 7-12.

Ramamoorthy, V., Viswnathan, R., Raguchander, T., Prakasam, V., Samiyappan, R. 2001. Induction of systemic resistance by plant growth promoting rhizobacteria in crop plants against pests and diseases. *Crop Protection* 20 : 1-11.

Ranjbariyan, AR, Shams-Ghahfarokhi M., Kalantari S., Razzaghi-Abyaneh M. 2011. Molecular Identification of Antagonistic Bacteria from Tehran Soils and Evaluation of Their Inhibitory Activities toward Pathogenic Fungi . *J. Microbiol.* 3 (3) : 140-146.

Rabea, E.I., El Badawy, M.T., Stevens, C.V., Smagghe, G., Steurbaut, W. 2003. Chitosan as antimicrobial agent : Applications and mode of action. *Biomacromolecules*. 4 : 1457–1465.

Raton, O-teresa de los M., Yano, R., Gamez, OR., Floh, ES., Dıaz, MJS., Barbosa, HR. 2012. Isolation and characterisation of aerobic endospore forming Bacilli from sugarcane rhizosphere for the selection of strains with agriculture potentialities. *World J Microbiol Biotechnol* 28: 1593–1603.

Reyes-Ramirez A., Escudero-Abarca BI., Aguilar-Uscanga G., Hayward-Janes PM., Barboza-Corona JE. 2004. Antifungal activity of *Bacillus thuringiensis* chitinase and its potential for the biocontrol of phytopathogenic fungi in soybean seeds. *J Food Sci* 69: 131–134.

Riederer, M and Schönherr, J. 1989. Foliar penetration and accumulation of organic chemicals in plant cuticles. 108 : 1–70.

Ryan R.P., et al. 2009. The versatility and adaptation of bacteria from the genus Stenotrophomonas. Nat. Rev. Microbiol. 7: 514 –525

Sato, H.; Mizutani, S.; Tsuge, S.; Aoi, K.; Takasu, A.; Okada, M.; Kobayashi, S.; Kiyosada, T., Shoda, S. (1998). Determination of the degree of acetylation of chitin/chitosan by pyrolysis-gas chromatography in the presence of oxalic acid. *Anal. Chem.*, 70 : 7–12

Saidi N., Kouki SM., Hiri F., Hajlaoui MR., Mahrouk M., Ouzari H., Jedidi N., Hassen A. 2009. Characterization and selection of *Bacillus* sp. strains, effective biocontrol agents against *Fusarium oxysporum* f. sp. *Radicis lycopersici*, the causal agent of Fusarium crown and root rot in tomato. *Ann Microbiol* 59 (2):191–198.

Sambrook J., Fritsch EF., Maniatis T.1987. Molecular cloning–a laboratory manual. Cold Spring Harbor Laboratory Press, New York.

Schaad, N. W., J. B. Jones and W. Chun. 2001. Laboratory guide for identification of plant pathogenic bacteria. Third Edition. Laboratory guide for identification of plant pathogenic bacteria. APS Press, 3340 Pilot Knob Road, St. Paul, USA**:** i-xii; 1-373.

Sgroy, V., Cassán, F., Masciarelli, O., Del Papa, M. F., Lagares, A. & Luna, V. 2009. Isolation and characterization of endophytic plant growth-promoting (PGPB) or stress homeostasis-regulating (PSHB) bacteria asso ciated to the halophyte Prosopis strombulifera. *Applied Microbiology and Biotechnology 85: 371-81.*

Somashekar, D and Richard, J. 1996. Chitosanases - properties and applications: A review. *Bioresources Technology* 55 : 35-45.

Stajković, O., De Meyer, S., Miličić, B., Willems, A., Delić, E. 2009. Isolation and characterization of endophytic non-rhizobial bacteria from root nodules of alfalfa (*Medicago sativa* L.). *Botanica serbica* 33 (1): 107-114.

Subandiyah, S., 2003. *Cara Kerja Ekstraksi DNA Menggunakan CTAB*. Workshop and Training Course on Molecular Detection for Plant and Enviromental Protecion. Faculty of Agriculture Gadjah Mada University 15-20 Desember 2003.

Supriadi. 2005. Present status of blood disease in Indonesia. In: Allen C, Prior P, Hayward AC (eds) Bacterial wilt disease and the *Ralstonia solanacearum* species complex. APS Press, Minnesota.

Suryadi, Y. D.N. Susilowati, P. Lestari, T.P. Priyatno, I.M. Samudra, N. Hikmawati dan N.R. Mubarik. 2014. Characterization of bacterial isolates producing chitinase and glucanase for biocontrol of plant fungal pathogens. Journal of Agricultural Technology 10(4) : 983-999.

Sutanto dan Edison. 2001. Pedoman Karakterisasi, Evaluasi Kultivar Pisang Solok: Balai Penelitian Tanaman Buah.

Tan, *R. X.* and Zou , W. X. 2001. Endophytes: a rich source of functional metabolites. *Nat. Prod. Rep* 18 : 448-459.

Ting, A. S. Y., Maha, S.W., Tee, C. S. 2012. Evaluating the feasibility of induced host resistance by endophytic isolate Penicillium citrinum BTF08 as a control mechanism for Fusarium wilt in banana plantlets. *Biological Control* 61 : 155–159

Thompson SE, Smith M, Wilkinsons MC, Peek K. 2001. Identificationand characterization of a chitinase antigen from *Pseudomonas aeruginosa* strain 385. *Appl Environ Microbiol* 67: 4001-4008.

Trillas, M.I., Casanova, E., Corxarrera, L., Ordovas, J., Borrero, C., Aviles, M., 2006. Composts from agricultural waste and the Trichoderma asperellum strain T-34 suppress *Rhizoctonia solani* in cucumber seedlings. *J Biol. Control* 39 : 32–38.

Tjitrosoepomo, G. 2000. Morfologi Tumbuhan. Yogyakarta: Gadjah Mada University Press.

Udomsilp J, Piyo A, Khang-Khun P, Thobunluepop P. 2009. Antifungal properties of essential oils from Thai medical plants againts rice pathogenic fungi. *J Food Ag-Ind 24-30*.

Utsunomiya N, Kinai H, Matsui Y, Takebaysshi T.1998. The effects of chitosan oligosaccharides soil conditioner and nitrogen fertilizer on the flowering and fruit growth of purple passion fruit *(Passiflora edulis Sims var. edulis).* Journal of the Japanese Society for Horticultural Science 67(4): 567-571.

Valmayor, R. V., Jamaluddin, S. H., Silayoi, B., Kusumo, S., Danh, L. D., Pascua, O. C., Espino, R. R. C. 2000. Banana Cultivar Names and Synonyms In Southeast Asia. International Network for the Improvement of Banana and Plantain-Asia and the Pacific Office, Los Banos, Laguna, Philippines.

Vander, P., Vaêrum, K.M., Domard, A., El Gueddari, N.E., Moerschbacher, B.M. 1998. Comparison of the ability of partially N-acetylated chitosans and chitooligosaccharides to elicit resistance reactions in wheat leaves. *Plant Physiol.* 118 : 1353–1359.

Van de Peer Y., Ben Ali A., Meyer A., 2000 - Microsporidia: accumulating molecular evidence that a group of amitochondriate and suspectedly primitive eukaryotes are just curious fungi. *Gene* 246: 1-8.

Wang, X and Xing, B. 2007. Importance of sructural makeup of biopolymer for organic contaminant sorption. *Environment Sci Technol*. 41 : 3559-3565.

Wang, S.F., Shen, L., Zhang, W.D., tong, W.J. 2005. Preparation and Mechanical Properties of chitosan/carbon nanotubes composites. *Biomacromoleculs* 6 : 3067-3072

Wibowo, A., S. Subandiyah, C. Sumardiyono, L. Sulistyowati, P. Taylor and M. Fegan. 2011. Occurrence of Tropical Race 4 of *Fusarium oxysporum* f. sp. *cubense* in Indonesia. *Plant Pathol*. J. 27(3) : 280-284.

Wu, H.S., Yang, X.M., Fan, J.Q., Miao, W.G., Ling, N., Shen, Q.R., 2008. Suppression of Fusarium wilt of watermelon by a bio-organic fertilizer containing combinations of antagonistic microorganisms. *Biological Control* 54 : 287–295.

Yamamoto, S. & Harayama, S. 1998. Phylogenetic relationships of Pseudomonas putida strains deduced from the nucleotide sequences of gyrB, rpoD and 16S rRNA genes. *Int J Syst Bacteriol* 48 : 813–819.

Yang JH., Liu HX., Zhu GM., Pan JL., Xu LP., Guo JH..2008. Diversity analysis of antagonists from rice-associated bacteria and their application in biocontrol of rice diseases. *J Appl Microbiol* 104: 91–104

Yang, D., Bo Wang, Jianxin Wang, Yu Chen, Mingguo Zhou. 2009. Activity and efficacy of *Bacillus subtilis* strain NJ-18 against rice sheath blight and Sclerotinia stem rot of rape. *J Biological Control* 51 : 61-65.

Yoshihiro, K., Hideo, T., Hajime, S., Tomohiro, H., Hirohiko, H., Masatoshi, K., Tadayuki, I., Takeshi, T. (2008). Interaction force of chitin-binding domains onto chitin surface. *Biomacromolecules*. 9, 2126-2131.

Zhang, N., Wu, K., He, X., Li, S.-q., Zhang, Z.-h., Shen, B., Yang, X.-m., Zhang, R.-f., Huang, Q.-w., Shen, Q.-r., 2011. A new bioorganic fertilizer can

effectively control banana wilt by strong colonization with *Bacillus subtilis* N11. *Plant Soil* 344 : 87–97.

Zhang, S.S., Raza, W., Yang, X.M., Hu, J., Huang, Q.W., Xu, Y.C., Liu, X.H., Ran, W., Shen, Q.R., 2008. Control of Fusarium wilt disease of cucumber plants with the application of a bio-organic fertilizer. *Biol. Fert. Soils* 44 : 1073–1080.

Zhang, Z., Yuen, G.Y., 1999. Biological control of Bipolaris sorokiniana on tall fescue by *Stenotrophomonas maltophilia* strain C3. *Phytopathology* 89 : 817-822

Zhang, J. F., Zheng, Y. G., Liu, Z. Q. & Shen, Y. C. 2007. Preparation of 3-ketovalidoxylamine A C-N lyase substrate: N-p-nitrophenyl-3-ketovalidamine by *Stenotrophomonas maltrophilia* CCTCC M 204024. *Appl. Microbiol. Biotechnol*. 73 : 1275–1281

Zhao, Q., Dong, C., Yang, X., Mei, X., Ran W., Shen, Q., Xu, Y. 2011. Biocontrol of Fusarium wilt disease for Cucumis melo melon using bio-organic fertilizer. *Appl Soil Ecology* 47 : 67–75.

Zinniel D.K., Lambrecht, P., Harris., Feng, Z., Kuczmarski, D., Higley, A., Ishimaru, C.A., Arunakumari, A., Barletta, R.G. and Vidaver, A.K. 2002. Isolation and characterization of endophytic colonizing bacteria from agronomic crops and prairie plants. Appl. *Environ. Microbiol.* 68 : 2198-2208.

Zyl-Van, E, and Steyn, P.L. 1992. Reinterpretation of the taxonomic position of *Xanthomonas maltophilia* and taxonomic criteria in this genus. Request for an opinion. *Int J Syst Bacteriol*. 42(1) : 193-198.