

REFERENCES

- Abdelzaher, H. M. A., Imam, M. M., Shoulkamy, M.A. and Gherbawy, Y.M.A. 2004. Biological control of *Pythium* damping-off of bush okra using rhizosphere strains of *Pseudomonas fluorescens*. Mycobiology 32(3): 139–147.
- Agrios, G. N. 1997. Plant Pathology, 4th edition. Academic Press, San Diego.
- Agrios G. N. 2005. Plant Pathology, 5th edition. Elsevier Academic Press, New York.
- Arunyanart, P., Nilpanit, N., Srisantana, W. and Disthaporn, S. 2001. Effectiveness of bioproduct of *Bacillus subtilis* to control rice sheath blight disease. Thai Agric. Res. J. 19(1): 4–12.
- Atlas, R. M. 2010. Handbook of microbiological media, 4th edition. CRC Press, Washington. 2037 p.
- Awasthi, L. P. 2015. Recent Advances in the Diagnosis and Management of Plant Disease. Springer, India. 294 p.
- Bacon, C. W. and White, J. F. 2000. Microbial Endophytes, Marcel Dekker, Inc., New York. 514 p.
- Barka, E. A., Vatsa, P., Sanchez, L., Gaveau-Vaillant, N., Jacquard, C., Klenk, H., Clément, C., Ouhdouch, Y. and Wezel, G. P. 2016. Taxonomy, physiology, and natural product of actinobacteria. MMBR 80: 1–43.
- Bhosale, R. S., Hajare, K. Y., Mulay, B., Mujumdar, S. and Kothawade, M. 2015. Biosynthesis, characterization and study of antimicrobial effect of silver nanoparticles by *Actinomycetes* spp. Int. J. Curr. Microbiol. Appl. Sci. 2: 144–151.
- Bieber, B., Nüske, J., Ritzau, M. and Gräfe, U. 1998. Alnumycin a new naphthoquinone antibiotic produced by an endophytic *Streptomyces* sp. J. Antibiot. 51: 381–382.

- Burgess, L. W., Nelson, P. E., Toussoun, T. A. and Forbes, G. A. 1988. Distribution of *Fusarium* species in section Roseum, *Arthrosporiella*, *Gibbosum* and *Discolor* recovered from grassland, pasture and pine nursery soils of Eastern Australia. *Mycologia*. 80(6): 815–824.
- Cao, L., Qiu, Z., You, J., Tan, H. and Zhou, S. 2005. Isolation and characterization of endophytic *Streptomyces* antagonists of *Fusarium* wilt pathogen from surface-sterilized banana roots. *Microbiol Lett*. 247: 147–152.
- Chaudhary, H. S., Soni, B., Shrivastava, A. R. and Shrivastava, S. 2013. Diversity and versatility of actinomycetes and its role in antibiotic production. *J. Appl. Pharm. Sci*. 3: 83–94.
- Cheng, G., Liu, F., Huang, Y., Yang, H., Yao, J., Shen, H. and Xu, J. 2014. Colonization of *Streptomyces felleus* YJ1 and its effects on disease resistant-related enzymes of oilseed rape. *J. Agri. Sci*. 6: 26-33.
- Chi, F., Shen, S. H., Cheng, H. P., Jing, Y. X., Yanni, Y. G. and Dazzo, F. B. 2005. Ascending migration of endophytic Rhizobia, from roots to leaves, inside rice plants and assessment of benefits to rice growth physiology. *Appl. Environ. Microb*. 71: 7271–7278.
- Chung, W. C., Huang, J. W. and Huang, H. C. 2004. Formulation of a soil biofungicide for control of damping-off of Chinese cabbage (*Brassica chinensis*) caused by *Rhizoctonia solani*. *Biol. Control* 32: 287–294.
- Coombs, J. T. and Franco, C. M. M. 2003. Isolation and identification of actinobacteria from surface-sterilized wheat roots. *Appl. Environ. Microbiol*. 69(9): 5603–5608.
- Coomb, J. T., Michelsen P. P. and Franco, C. M. M. 2004. Evaluation of endophytic actinobacteria as antagonists of *Gaeumannomyces graminis* var. *tritici* in wheat. *Biol. Control* 29: 359–366.
- Crawford, D. L., Lynch, J. M., Whipps, J. M. and Ousley, M. A. 1993. Isolation and characterization of actinomycete antagonists of a fungal root pathogen. *Appl. Environ. Microbiol*. 59: 3889–3905.

- Das, S., Lyla, P. S. and Khan, S. A. 2008. Distribution and generic composition of culturable marine actinomycetes from the sediments of Indian continental slope of Bay of Bengal. *Chin. J. Oceanol. Limnol.* 26: 166–177.
- Doumbou, C. L., Hamby Salove, M. K., Crawford, D. L. and Beaulieu, C. 2012. Actinomycetes, promising tools to control plant diseases and to promote plant growth. *Phytoprotection* 82: 85–102.
- Edmunds, B. A. and Gleason, M. L. 2003. Perennation of *Sclerotium rolfsii* var. *delphinii* in Iowa. Plant Management Network. 1-15. doi:10.1094/PHP-2003-1201-01-RS.
- Elad, Y., Hader, Y., Chet, I. and Henis, Y. 1982. Prevention, with *Trichoderma harzianum* Rifai aggr., of reinfestation by *Sclerotium rolfsii* Sacc, and *Rhizoctonia solani* Kuhn of soil fumigated with methyl bromide, and improvement of disease control in tomatoes and peanuts. *Crop Prot.* 1: 199–211.
- Elmer, W. 2008. Biological and biorational fungicides offer control options. NMPRO, Website: http://www.bioworksinc.com/in-the-news/nmpro_8-08.pdf, 14 June 2013.
- El-Tarabily, K. A., Hardy, G. E. St. J., Sivasithamparam, K., Hussein, A. M. and Kurtböke I. D. 1997. The potential for the biological control of cavity spot disease of carrots caused by *Pythium coloratum* by streptomycete and non-streptomycete actinomycetes in Western Australia. *New Phytologist* 137: 495–507.
- El-Tarabily, K. A. 2003. An endophytic chitinase-producing isolate of *Actinoplanes missouriensis*, with potential for biological control of root rot of lupine caused by *Plectosporium tabacinum*. *Aust. J. Bot.* 51: 257–266.
- El-Tarabily, K. A., Nassar, A. H., Hardy, G. E. St. J. and Sivasithamparam, K. 2009. Plant growth promotion and biological control of *Pythium aphanidermatum*, a pathogen of cucumber, by endophytic actinomycetes. *J. Appl. Microbiol.* 106: 13–26.

- Ezra, D., Castillo, U. F., Strobel, G. A., Hess, W. M., Porter, H., Jensen, J. B., Condrón, M. A., Teplow, D. B., Sears, J., Maranta, M., Hunter, M., Weber, B. and Yaver, D. 2004. Coronamycins, peptide antibiotics produced by a verticillate *Streptomyces* sp. (MSU-2110) endophytic on *Monstera* sp. Microbiology 150: 785–793.
- Ezziyyani, M., Sánchez, C. P., Requena, M. E., Rubio, L. and Candela, M. E. 2004. Biocontrol por *Streptomyces rochei* –Ziyani–, de la podredumbre del pimiento (*Capsicum annuum* L.) causada por *Phytophthora capsici*. Anales de Biología. 26: 69–78.
- Fawzi, E. M., Khalik, A. A. and Afifi, A. F. 2009. Antifungal effect of some plant extracts on *Alternaria alternata* and *Fusarium oxysporum*. Afr. J. Biotechnol. 8(11): 2590–2597.
- Filonow, A. B. and Dole, J. M. 1999. Biological control of *Pythium* damping-off and root rot of greenhouse-grown geraniums and poinsettias. Proc. Okla. Acad. Sci. 79: 29–32.
- Fourie, G., Steenkamp, E. T., Ploetz, R. C., Gordon, T. R. and Viljoen, A. 2011. Current status of the taxonomic position of *Fusarium oxysporum formae specialis cubense* within the *Fusarium oxysporum* complex. Infect. Genet. Evol. 11: 533–542.
- Gangwar, M., Dogra, S., Gupta, U. P. and Kharwar, R. N. 2014. Diversity and biopotential of endophytic actinomycetes from three medicinal plants in India. Afr. J. Microbiol. Res. 8(2): 184–191.
- Gaspar D. M., Alberto C. A., Mara S. P. A. and Adolfo H. M. 1997. Methoxyflavones from *Ficus maxima*. Phytochemistry 45: 1697–1699.
- George, E., Marshner, H. and Jakobsen, I. 1995. Role of arbuscular mycorrhizal fungi in uptake of phosphorus and nitrogen from soil. Crit. Rev. Biotechnol. 15: 257–270.
- Getha, K. and Vikineswary, S. 2002. Antagonistic effects of *Streptomyces violaceusniger* strain G10 on *Fusarium oxysporum* f.sp. *cubense* race 4: indirect evidence for the role of antibiosis in the antagonistic process. J. Ind. Microbiol. Biotechnol. 28(6): 303–310.

- Goodfellow, M. 2012. Phylum XXVI *Actinobacteria* phyl. nov. pp 33-34. In Goodfellow, M., Kämpfer, P., Busse, H. J., Trujillo, M. E., Suzuki, K., Ludwig, W., Whitman, W. B. (eds) *Bergey's Manual of Systematic Bacteriology* 2nd edition, Springer, New York.
- Goudjal, Y., Toumatia, O., Sabaou, N., Barakate, M., Mathieu, F. and Zitouni, A. 2013. Endophytic actinomycetes from spontaneous plants of Algerian Sahara: indole-3-acetic acid production and tomato plants growth promoting activity. *World J. Microbiol. Biotechnol.* 29: 1821-1829.
- Green, S., Stewart-Wade, S. M., Boland, G. J., Teshler, M. P. and Liu, S. H. 1998. Formulating microorganisms for biological control of weeds. pp 249-281. In Boland, G. J., Kuykendall, L. D. (eds) *Plant-Microbe Interactions and Biological Control*, Dekker, New York.
- Hallmann, J., Quadt-Hallmann, A., Mahaffee, W. F. and Kloepper, J. W. 1997. Bacterial endophytes in agricultural crops. *Can. J. Microbiol.* 43: 895-914.
- Hasegawa, S., Meguro, A., Toyoda, K., Nishimura, T. and Kunoh, H. 2005. Drought tolerance of tissue-cultured seedlings of mountain laurel (*Kalmia latifolia* L.) induced by an endophytic actinomycete. II. Acceleration of callose accumulation and lignification. *Actinomycetologica* 19: 13-17.
- Hasegawa, S., Meguro, A., Shimizu, M., Nishimura, T. and Kunoh, H. 2006. Endophytic actinomycetes and their interactions with host plants. *Actinomycetologica* 20: 72-81.
- He, F., Zhang, Z. L., Cui, M. and Xue, Q. H. 2015. Effect of biocontrol actinomycetes agents on microflora in the root-zone of *Amorphophallus konjac* K. Koch ex N.E. *Br. Chin. J. Appl. Environ. Biol.* 21(2): 221-227.
- Igarashi, Y., Iida, T., Sasaki, Y., Saito, N., Yoshida, R. and Furumai, T. 2002. Isolation of actinomycetes from live plants and evaluation of antiphytopathogenic activity of their metabolites. *Actinomycetologica* 16: 9-13.

- Jobin, G., Couture, G., Goyer, C., Brzezinski, R. and Carole, B. 2004. *Streptomyces* spores entrapped in chitosan beads as a novel biocontrol tool against common scab of potato. *Appl. Microbiol. Biotechnol.* 68: 104–110.
- Jones, C. R. and Deborah, A. S. 1996. Biological control of fungi causing alfalfa seedling damping-off with a disease-suppressive strain of *Streptomyces*. *Biol. Control* 7: 196–204.
- Kanini, G. S., Katsifas, E. A., Savvides, A. L. and Karagouni, A. D. 2013. *Streptomyces rochei* ACTA1551, an indigenous Greek isolate studied as a potential biocontrol agent against *Fusarium oxysporum* f.sp. *lycopersici*. *Biomed. Res. Int.* <http://dx.doi.org/10.1155/2013/387230>.
- Kavitha, A. Vijayalakshmi, M., Sudhakar, P. and Narasimha, G. 2010. Screening of actinomycete strains for the production of antifungal metabolites. *African J. Microbiol. Res.* 4(1): 027–032.
- Kekuda, T. R. P., Shobha, K. S. and Onkarappa, R. 2010. Studies on antioxidant and anthelmintic activity of two *Streptomyces* species isolated from Western Ghat soils of Agumbe, Karnataka. *J. Pharm. Res.* 3: 26-29.
- Kenkyojo, S. 1987. *New Dictionary of Color Name*. Nihon Color Research Institute, Tokyo. 148 p.
- Khan, M. R., Majid, S., Mohidin, F. A. and Nabilah, K. 2011. A new bioprocess to produce low cost powder formulations of biocontrol bacteria and fungi to control fusarial wilt and root-knot nematode of pulses. *Biol. Control.* 59(2):130-140.
- Kim, W. G., Weon, H. Y. and Lee, S. Y. 2008. *In vitro* antagonistic effects of Bacilli isolates against four soilborne plant pathogenic fungi. *Plant Pathol. J.* 24: 52–57.
- Kohmoto, K., Singh, U. S. and Singh, R. P. 1995. Pathogenesis and host specificity in plant pathogenic fungi and nematodes. Pp 21-27. *In: Kohmoto, K. (ed.) Pathogenesis and Host Specificity in Plant Disease VII. Eukaryotes*, Pergamon Press, Oxford, UK.

- Krechel, A., Faupel, A., Hallmann, J., Ulrich, A. and Berg, G. 2002. Potato associated bacteria and their antagonistic potential towards plant-pathogenic fungi and the plant-parasitic nematode *Meloidogyne incognita* (Kofoid & White) Chitwood. *Can. J. Microbiol.* 48: 772–786.
- Lechevalier, H. and Lechevalier, M. P. 1981. Introduction to the order Actinomycetes. pp 1915–1922. *In*: Starr, M. P., Stolp, H., Trüper, H. G., Balows, A., Schlegel, H. G., Editors. *The Prokaryotes*. Germany: Springer-Verlage Berlin.
- Lee, S. O., Choi, G. J., Choi, Y. H., Jang, K. S., Park, D. J., Kim, C. J. and Kim, J.C. 2008. Isolation and characterization of endophytic actinomycetes from Chinese cabbage roots as antagonists to *Plasmodiophora brassicae*. *J. Microbial Biotechnol.* 18: 1741-1746.
- León, J., Aponte, J. J., Cuadra, D., Galindo, N., Jaramillo, L., Vallejo, M. and Marguet, E. 2016. Actinomicetos aislados de *Argopecten purpuratus* productores de enzimas extracelulares y con actividad inhibitoria de patógenos marinos. *Revista de Biología Marina y Oceanografía.* 51: 69–80.
- Lewis, J. A. 1991. Formulation and delivery systems of biological control agents with emphasis on fungi. *In* “The Rhizosphere and Plant Growth”. Kluwer Academic, Dordrecht 279–287.
- Liao, H. D., Yuan, S. S., Yang, Y. Z., Liu, X. M., Xu, T., Hu, X. C., Zeng, X. D., Zhang, X., Liu, Y. Q. and Zhu, Y. H. 2015. Screening and identification of an endophytic *Streptomyces* to antagonize rice blast. *HNU* 42(12): 80–87.
- Lumsden, R. D., Lewis, J. A. and Fravel, D. R. 1995. Formulation and delivery of biocontrol agents for use against soilborne plant pathogens. pp 166–182. *In*: Hall, F. R., Barry, J. W. (eds) *Biorational Pest Control Agents*. American Chemical Society, Washington, DC.
- Ma, Y. Y., Li, Y. L., Lai, H. X., Guo, Q. and Xue, Q. H. 2017. Effects of two strains of *Streptomyces* on root-zone microbes and nematodes for biocontrol of root-knot nematode disease in tomato. *Appl. Soil Ecol.* 112: 34–41.

- Minamiyama, H., Shimizu, M., Furumai, T., Igarashi, Y., Onaka, H., Yoshida R. and Kunoh, H. 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.
- Miyadoh, S., Hamada, M., Hotta, K., Kudo, T., Seino, A., Vobis, G., Yokota, A. 1997: Atlas of Actinomycetes, The Society for Actinomycetes, Japan. Asakura Publishing Co., Ltd., Tokyo, Japan.
- Murashige, T. and Skoog, F. 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. Physiol. Plant. 15: 473–97.
- Nishimura, T., Meguro, A., Hasegawa, S., Nakagawa, Y., Shimizu, M. and Kunoh, H. 2002. An endophytic actinomycetes, *Streptomyces* sp. AOK-30, isolated from mountain laurel and its antifungal activity. J. Gen. Plant Pathol. 68: 390–397.
- Nzungize, J., Gepts, P. and Buruchara, R. 2011. Pathogenic and molecular characterization of *Pythium* species inducing root rot symptoms of common bean in Rwanda. Africa J. Microbiol. Res. 5(10): 1169-1181.
- Olano, C., García, I., González, A., Rodríguez, M., Rozas, D., Rubio, J., Sánchez-Hidalgo, M., Braña, A. F., Méndez, C. and Salas, J. 2014. Activation and identification of five clusters for secondary metabolites in *Streptomyces albus* J1074. Microb. Biotechnol. 7(3): 242–256.
- Pal, K. K. and Gardener, B. M. 2006. Biological Control of Plant Pathogens. *The Plant Health Instructor*. DOI: 10.1094/PHI-A-2006-1117-02.
- Pazhanimurugan, R., Radhakrishnan, M., Shanmugasundaram, T., Gopikrishnan, V. and Balagurunathan, R. 2016. Terpenoid bioactive compound from *Streptomyces rochei* (M32): taxonomy, fermentation and biological activities. World J. Microbiol. Biotechnol. 32(10): 161. DOI: 10.1007/s11274-016-2121-5
- Preito, P., Schilirò, E., Maldonado-González, M. M., Valderrama, R., Barroso-Albarracín, J. B. and Mercado-Blanco, J. 2011. Root hairs play a key role in the

- endophytic colonization of olive roots by *Pseudomonas* sp. with biocontrol activity. *Microb. Ecol.* 62: 435–445.
- Punja, Z. K. 1985. The biology, ecology, and control of *Sclerotium rolfsii*. *Ann. Rev. Phytopathol.* 23: 97–127.
- Qin, S., Xing, K., Jiang, J. H., Xu, L. H. and Li, W. J. 2011. Biodiversity, bioactive natural products and biotechnological potential of plant-associated endophytic actinobacteria. *Appl. Microbiol. Biotechnol.* 89: 457–473.
- Rahman, M. A., Kadir, J., Mahmud, T. M. M., Rahman, A. and Begum, M. M. 2007. Screening of antagonistic bacteria for biocontrol activities on *Collectotrichum gloeosporioides* in payaya. *Asian J. Plant Sci.* 6(1): 12–20.
- Rakow, G. 2004. Species origin and economic importance of *Brassica*. pp 3–11. In: Pua, E. G. and Douglas, C. J. (eds) *Brassica*, Berlin, Heidelberg, Springer.
- Raja, P., Balachandar, D. and Sundaram, S. P. 2008. Genetic diversity and phylogeny of pink-pigmented facultative methylotrophic bacteria isolated from the phyllosphere of tropical plants. *Biol. Fertil. Soils* 45: 45–53.
- Ravikumar, S., Inbaneson, S. J., Uthiraselvam, M., Priya, S. R., Ramu, A. and Banerjee, M. B. 2011. Diversity of endophytic actinomycetes from Karangkadu mangrove ecosystem and its antibacterial potential against bacterial pathogens. *J. Pharm. Res.* 4: 294–296.
- Reddy, N. G. Ramakrishna, D. P. N. and Raja Gopal, S. V. 2011. A morphological, physiological and biochemical studies of marine *Streptomyces rochei* (MTCC 10109) showing antagonistic activity against selective human pathogenic microorganisms. *Asian J. Biol. Sci.* 4(1): 1–14.
- Rosenblueth, M. and Martínez-Romero, E. 2006. Bacterial endophytes and their interactions with host. *Mol. Plant Microbe. Interact.* 19(8): 827–837.
- Rossmann, A. Y. and Palm, M. E. 2006. Why are *Phytophthora* and other Oomycota not true fungi. *APS* 17: 217–219.

- Sabaratnam, S. and Traquair, J. A. 2002. Formulation of a *Streptomyces* biocontrol agent for the suppression of *Rhizoctonia* damping-off in tomato transplants. Biol. Control 23: 245–253.
- Sariah, M. 1994. Potential of *Bacillus* spp. as a biocontrol agent for anthracnose fruit rot of chilli. Malays. Applied Biol. 23: 53–60.
- Sasaki, T., Igarashi, Y., Saito N. and Furumai, T. 2001. TPU-0031-A and B, new antibiotics of the novobiocin group produced by *Streptomyces* sp. J. Antibiot. 54: 441–447.
- Sharifi, F., Farrokhi, P. R., Bonjar, G. H. S., Aghighi, S., Aram F. and Khalesi, E. 2007. Biological control of *Pythium aphanidermatum*, the causal agent of damping off disease of greenhouse cucurbits in Kerman province of Iran. Res. J. Biol. Sci. 2(2): 188–191.
- Shimizu, M., Nakagawa, Y., Sato, Y., Furumai, T., Igarashi, Y., Onaka, H., Yoshida, R. and Kunoh, H. 2000. Studies on endophytic actinomycetes *Streptomyces* sp. isolated from rhododendron and its antifungal activity. J. Gen. Plant Pathol. 66: 360–366.
- Shimizu, M., Fujita, N., Nakagawa, Y., Nishimura, T., Furumai, T., Igarashi, Y., Onaka, H., Yoshida, R. and Kunoh, H. 2001. Disease resistance of tissue-cultured seedlings of rhododendron after treatment with *Streptomyces* sp. R-5. J. Gen. Plant Pathol. 67: 325–332.
- Shimizu, M., Igarashi, Y., Furumai, T., Onaka, H. and Kunoh, H. 2004. Identification of endophytic *Streptomyces* sp. R-5 and analysis of its antimicrobial metabolites. J. Gen. Plant Pathol. 70: 66–68.
- Shimizu, M., Suzuki, T., Mogami, O. and Kunoh, H. 2005. Disease resistance of plants induced by endophytic actinomycetes. pp. 292-293. In: Tsuyumu, S., Leach, J. E., Shiraishi, T. and Wolpert, T. (eds) Genomic and Genetic Analysis of Plant Parasitism and Defense. APS, St. Paul.

- Shirling, E.B. and Gottlieb, D. 1966. Methods for characterization of *Streptomyces* species. International Journal of Systematic and Evolutionary Microbiology 16: 313-340.
- Smith, I. M., Dunez, J., Phillips, D. H., Lelliott, R. A. and Archer, S. A. 1988. European Handbook of Plant Disease. Blackwell Scientific Publication, Oxford, UK. 583 page.
- Sprusansky, O., Stirrett, K., Skinner, D., Denoya, C. and Westpheling, J. 2005. The bkd R gene of *Streptomyces coelicolor* is required for morphogenesis and antibiotic production and encodes a transcriptional regulator of a branched chain amino acid dehydrogenase complex. J. Bacteriol. 187: 664–671.
- Strobel, G. and Daisy, B. 2003. Bioprospecting for microbial endophytes and their natural products. MMBR 67(4):491–502.
- Strobel G., Daisy, B., Castillo, U. and Harper, J. 2004. Natural products from endophytic microorganisms. J. Nat. Prod. 67:257–268.
- Suzuki T., Shimizu, M., Meguro, A., Hasegawa, S., Nishimura T. and Hitoshi, K. 2005. Visualization of infection of an endophytic actinomycete *Streptomyces galbus* in leaves of tissue-cultured Rhododendron. Actinomycetologica 19: 7–12.
- Taechowisan, T. and Lumyong S. 2003. Activity of endophytic actinomycetes from roots of *Zingiber officinale* and *Alpinia galanga* against phytopathogenic fungi. Ann. Microbiol. 53: 291–298.
- Taechowisan, T., Lu, C., Shen, Y. and Lumyong, S. 2005. 4-arylcoumarins from endophytic *Streptomyces aureofaciens* CMUAc130 and their antifungal activity. Ann. Microbiol. 55: 63–66.
- Tanvir, R., Sajid, I. and Hasnain, S. 2014. Biotechnological potential of endophytic actinomycetes associated with Asteraceae plants: isolation, biodiversity and bioactivities. Biotechnol. Lett. 36(4): 767-773.

- Ting, A. S. Y., Meon, S., Kadir, J., Radu S. and Singh, G. 2008. Endophytic microorganisms as potential growth promoters of banana. *Biol. Control* 53: 541–553.
- Valois, D., Fayad, K., Barasubiye, T., Garon, T., Dery, C., Brzezinski, R. and Beaulieu, C. 1996. Glucanolytic *Actinomyces* antagonistic to *Phytophthora fragariae* var. *rubi*, the causal agent of raspberry root rot. *Appl. Environ. Microbiol.* 62: 1630–1635.
- Ventura, M. Canchaya, C., Tauch, A. Chandra, G., Fitzgerald, G. F., Chater, K. F. and Sinderen, D. 2007. Genomics of actinobacteria: tracing the evolutionary history of an ancient phylum. *Microbiol. Mol. Biol. Rev.* 71: 495–548.
- Waksman, S. A. 1940. On the classification of Actinomycetes. *J. Bacteriol.* 39: 549–558.
- Weller, D. M. 1988. Biological control of soilborne plant pathogens in the rhizosphere with bacteria. *Annu. Rev. Phytopathol.* 26: 379–407.
- Williams, S. T., Sharpe, M. E., Holt, J. G., Murray, G. E., Brenner, D. J., Krieg, N. R., Mouldar, J. W., Pfenning, N. P., Sneath, H. A. and Staley, J. T. 1989. *Bergey's Manual of Systematic Bacteriology*, vol. 4. Williams and Wilkins, Baltimore. 2648 p.
- Yaqub, F. and Shahzad, S. 2005. Pathogenicity of *Sclerotium rolfsii* on different crops and effect of inoculum density on colonization of mungbean and sunflower. *Pak. J. Bot.* 37: 175-180.
- Zin, N. M., Sarmin, N. I., Ghadin, N., Basri, D. F., Sidix, N. M., Hess, W. M. and Strobel, G. A. 2007. Bioactive endophytic streptomycetes from the Malay Peninsula. *FEMS Microbiol. Lett.* 274: 1–6.

LIST OF PUBLICATIONS

- 1) **Suwitchayanon, P.**, Chaipon, S. and Kunasakdakul, K. 2012. Antagonistic effects on *Pythium aphanidermatum* and survival rate in fluctuation conditions of endophytic actinomycetes isolated from medicinal plants. In The 10th National Plant Protection Conference: Thai Plant Protection in a Global Warming World, February 22-24, 2012. Organized by Thai Mycological Association. Khum Phucome Hotel, Chiang Mai, Thailand. **(Poster presentation)**
- 2) **Suwitchayanon, P.**, Phuakjaiphaeo, C. and Kunasakdakul, K. 2012. Identification and Evaluations of Endophytic Actinomycetes strain GAR1 for Bio-control Effect on *Pythium aphanidermatum* and Plant Growth Promoting Properties. pp 717–720. In 1st Asean Plus Three Graduate Research Congress, March 1-2, 2012. Organized by The Graduate School, Chiang Mai University. The Empress Hotel, Chiang Mai, Thailand. **(Oral presentation in English)**
- 3) Kunasakdakul, K., **P. Suwitchayanon** and Phuakjaiphaeo, C. 2012. Antifungal Pathogen Activities and Growth Promotion of Endophytic Actinomycetes on Brassica Seedling. CMU.J.Nat.Sci. Special Issue on Agricultural & Natural Resources Vol. 11: 7-12.