

เอกสารอ้างอิง

- จิระเดช แจ่มสว่าง จินตนา ชนะะ วรรณวิไล เกษนรา เฉลิมลาภ ช่วยประสิทธิ์ สุพรรณิ ชีววิริยะกุล อีรยุทธ ตูจันดา ศรปราชญ์ ธโนศวรรยางกุล วุฒิชัย ญาณอรรถ กัทสิวัลย์ สุขช่วย และ สำนัก กายา ผาด. 2535. การควบคุมโรคต้นแห้งของข้าวบาร์เลย์โดยวิธีคลุกเมล็ดด้วยมวลชีวภาพของเชื้อรา *Trichoderma hazianum*. วารสารข้าวศูนย์ปฏิบัติการวิจัยและเรือนปลูกพืชทดลอง มหาวิทยาลัยเกษตรศาสตร์. 6: 4-8.
- จิระเดช แจ่มสว่าง จินตนา ชนะะ ปราโมทย์ ศิริโรจน์ กณิษฐา สังกะหะ วิชชุพร ว่องสุวรรณเลิศ และวรรณวิไล เกษนรา. 2536. ประสิทธิภาพของเชื้อราไตรโคเดอร์มา ฮาเซียนัม พันธุ์กลายที่ต้านทานต่อเบนโนมิลในการยับยั้งการเจริญของเชื้อราสเคลอโรเทียม รอล์ฟฟิโอ. น.76 ใน บทความย่อของการประชุมวิชาการครั้งที่ 5 ของสมาคมเทคโนโลยีชีวภาพแห่งประเทศไทย เรื่อง เทคโนโลยีชีวภาพเพื่อพัฒนาคุณภาพชีวิต. 25-27 พฤศจิกายน 2536. โรงแรมฮิลตัน อินเตอร์เนชั่นแนล กรุงเทพฯ.
- พรพรรณ พรหมเสถียร. 2543. ผลของสาร secondary metabolite ของเชื้อรา *Trichoderma* spp. ต่อเชื้อรา *Sclerotium rolfsii* Sacc. สาเหตุโรคโคนเน่าของมะเขือเทศ. วิทยานิพนธ์วิทยาศาสตรมหาบัณฑิต มหาวิทยาลัยขอนแก่น.
- วีระศักดิ์ ศักดิ์ศิริรัตน์ และระวีวรรณ ศรีละเอียด. 2529. การศึกษาเชื้อ *Trichoderma* spp. เพื่อใช้ป้องกันโรคโคนเน่าของผักและถั่วลิสงโดยชีววิธี. เกษตร. 13: 278-282.
- สุวิดา แสไพศาล. 2549. เอนไซม์ย่อยสลาย ความสัมพันธ์ทางพันธุกรรมของลำดับนิวคลีโอไทด์ ในส่วน ITS1-5.8S-ITS2 ของ rDNA และการโคลนยีนโคตินเนสของเชื้อรา *Trichoderma* spp. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิชาโรคพืชวิทยา บัณฑิตวิทยาลัย มหาวิทยาลัยขอนแก่น.
- Atkinson, M.M. 1993. Molecular mechanism of pathogen recognition by plant. Advance Pl. Pathol. 42: 83-95.
- Bunyatratchata, W., W. Saksiriat, P. Sirithorn, and P. Teerakupisut. 2005. Race identification of fusarium with pathogen of tomato, *Fusarium oxysporum* f. sp. *lycopersici* by pathogenic reaction on standard differential host and development of Thai differential host. Khon Kaen Agriculture Journal 33, 95-107.
- Barker, C., 2000. Systemic acquired resistance. Pp. 198-217 in: Dickinson M. and Beynon J. (ed). Molecular plant pathology. Sheffield Academic Press, Sheffield, U.K.
- Bigirimana, J., G. De Meyer, J. Poppe, Y. Elad, and M. Hofte. 1997. Induction of systemic resistance on bean (*Phaseolus vulgaris*) by *Trichoderma harzianum*. Med. Fac. Landbouw, Univ. Gent. 62: 1001-1007.

- Bol, J.F., H.J. M. Linthort, and B.J.C. Cornelissen. 1990. Plant pathogenesis-related protein induce by virus infection. *Ann. Rev. Phytopathol.* 28:113-138.
- Bradford, M.M. 1976. A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding. *Anal. Biochem.* 72: 248-254.
- Charirak, P., W. Saksirirat, and W. Bunyatratchata. 2008. Effect of antagonistic fungi, *Trichoderma* spp. on enzyme activity induction of β -1,3-glucanase and chitinase derived from tomato leaf. 9th National Grad Research Conference. 14-15 March 2008.
- Darvill, A.G. and P. Albersheim. 1984. Phytoalexin and their elicitors – a defense against microbial infection in plants. *Ann. Rev. Pl. Physiol.* 35: 243-275.
- Dixon, R. A. and M. J. Harrison. 1992. Activation, structure and organization of genes involved in microbial defense in plants. *Adv. Genetic.* 28: 165-234.
- Edreva, A., D. Blancard, R. Delon, P. Bonnet and P. Ricci. 2002. Biochemical changes in β -cryptogein-elicited tobacco: a possible of acquire resistance. *Beitraege zur Tabakforschung Inter.* 20: 53-59.
- Engelberth, J., E.A. Schmelz, H.T. Alborn, Y.J. Cardoza, J. Huang, and J.H. Tumlinson. 2003. Simultaneous quantification of jasmonic acid and salicylic acid in plants by vapor-phase extraction and gas chromatography–chemical ionization–mass spectrometry. *Anal. Biochem.* 312: 242–250.
- Gaffney, T., L. Friedrich, B. Vernooij, D. Negrotto, G. Nye, S. Uknes, E. Ward, H. Kessmann, and J. Ryals. 1993. Requirement of salicylic acid for the induction of systemic acquired resistance. *Science* 261: 754-756.
- Gailite, A., I. Samsone, and G. Ievinsh. 2005. Ethylene is involved in *Trichoderma*-induced resistance of bean plants against *Pseudomonas syringae*. *Acta Universitatis Latviensis* 691: 59-70.
- Giri A. P., A. M. Harsulkar, A.G. Patankar, V.S. Gupta, M. N. Sainani, V.V. Deshpande, and P.K. Ranjekar. 1998. Association of induction of protease and chitinase in chickpea roots with resistance to *Fusarium oxysporum* f.sp. *ciceri*. *Plant Pathology* 47: 693–699.
- Hahlbrock, K., D. Sheel, E. Logemann, T. Nurnberger, M. Parniske, S. Reinold, W. R. Sacks, and E. Schmelzer. 1995. Oligopeptide elicitor-mediated defense gene activation in cultured parsley cells. *Anal. Biochem.* 122: 252–258.

- Hahn, M. G., P. Buchell, F. Cervone, S. H. Doares, R. A. O'Neil, A. G. Darvill, and P. Albersheim. 1989. Roles of cell wall constituents in plant-pathogen interactions. In: Plant-Microbe Interactions-Molecular and Genetic Perspectives (eds. T. Kosung and E.W. Nester), vol. 3, pp. 131-181, McGraw-hill, NY.
- Harman, G.E., C.R. Howell, A. Viterbo, I. Chet, and M. Lorito. 2004. *Trichoderma* species-opportunistic, avirulent plant symbionts. Microbiology 2: 43-56.
- Heil, M. and R.M. Bostock. 2002. Induce systemic resistance (ISR) against pathogens in the context of induce resistance. Annal. Botany 89: 503-512.
- Hennin, C., E. Diederichsen and M. Hofte. 2001. Local and systemic resistance to fungal pathogens triggered by an AVR9-mediated hypersensitive response in tomato and oilseed rape carrying the *cf-9* resistance gene. Physiol. Molec. Pl. Pathol. 59: 287-259.
- Hommer, D.W., D.K. Bell, and C.A. Jawoeki. 1972. Efficacy of *Trichoderma harzianum* as a biocontrol for *Sclerotium rolfsii*. Phytopathology 73:1043-1046.
- Horst, L.E., J. Locke, C.R. Krause, R.W. McMahon, L.V. Madden, and H.A.J. Hoitink. 2005. Suppression of Botrytis blight of begonia by *Trichoderma hamatum* 382 in peat and compost-amended potting mixes. Plant Disease 89 (11): 1195-1200.
- Hurtado, O. 2004. Study and manipulation of the salicylic acid-dependent defense pathway in plants parasitized by *Orobancha aegyptiaca* Pers. Master of Sciences Thesis, Plant Physiology, Virginia Polytechnic Institute and State University, USA.
- Janice L. De Marco and Carlos Roberto Felix. 2002. Characterization of a protease produced by a *Trichoderma harzianum* isolate which controls cocoa plant witches' broom disease. Biochemistry 3. 1-7.
- Jones, D.A. and D. Takemoto, 2004. Plant innate immunity-direct and indirect recognition of general and specific pathogen-associated molecules. Curr. Opin. Inmu. 16:48-62.
- Kaewplung, P. 2001. Seed export, a billion Baht business. Seed Newsletter 8: 2-3.
- Khan, J., J.J. Ooka, L.V. Madden, S.A. Miller, and H.A.J. Hoitink, 2004. Systemic resistance induced by *Trichoderma hamatum* 382 in cucumber against Phytophthora crown rot and leaf blight. Pl. Dis. 88: 280-286.
- Klement, Z. 1982. Hypersensitivity. In: Plantpathogenic Prokaryotes. (eds. M. S. Mount and G. H. Lacy), Volume 2, pp. 149-177, Academic press, NY, USA.
- Kombrink, E. and I. E. Somssich. 1995. Defense response of plant to pathogens. Ad. Botani. Res. 21: 1-34.

- Mauch-Mani, B. and J.P. Metraux. 1998. Salicylic acid and systemic acquired resistance to pathogen attack. *Annal. Botany* 82: 535-540.
- Neuenschwander, U., B. Vernooij, L. Friedrich, S. Uknes, H. Kessmann, and J. Ryals. 1995. Is hydrogen peroxide a second messenger of salicylic acid in systemic acquire resistance ? . *Plant J.* 8: 227-233.
- Parker, E.J. 2000. Signalling in plant disease resistance. Pp. 198-217 in: Dickinson M. and Beynon J. (eds). *Molecular plant pathology*. Sheffield Academic Press, Sheffield, U.K.
- Rifai, M.A. 1969. A revision of the genus *Trichoderma*. *Mycol. Papers. C. M. I.* 116: 1-56.
- Saksirirat, W. and H.H. Hoppe. 1991. Secretion of extracellular enzyme by *Verticillium psalliotae* Treschow and *Verticillium lecanii* (Zimm,) Viegas during growth on uredospore of the soybean rust fungus (*Phakopsora pachyrhizi* Syd). Inliquid cultures. *J. Phytopathol.* 131: 161-173.
- Saksirirat, W., N. Boonsakdaporn, P. Sirithorn, and A. Pachinburavan. 1996. An application of the mycoparasite, *Trichoderma harzianum* Raifai. in combination with mancozeb for control tomato stem rot in northeast Thailand. *Proceeding of the International Workshop on Biological Control of Plant Diseases*. May 22-27, Beijing, China. Pp.327-329.
- Saksirirat, W., M. Chuebandit, P. Sirithorn and N. Sanoamuang. 2005. Species diversity of antagonistic fungus, *Trichoderma* spp. From seed production fields and its potential for control Fusarium wilt of tomato and cucurbits. The 4th International Conference on Biopesticides. Feb.13-18, 2005. Imperial Maeping Hotel, Chiangmai, Thailand.
- Saksirirat, W., P. Chareerak and W. Bunyatrachata. 2009. Induce systemic resistance of biocontrol fungus, *Trichoderma* spp. against bacterial and gray leaf spot in tomatoes. *The International Symposium Go..Organic 2009, The Approach of Organic Agriculture: New market, food security and a clean environment*, 19-21 August 2009, Pullman Bangkok King Power Hotel, Bangkok, Thailand.
- Sameer A.M., Q. Zhu, L. Chris, and D.A. Richard. 1996. Constitutive expression of an inducible β -1,3-glucanase in alfalfa reduces disease severity caused by the oomycete pathogen *Phytophthora megasperma* f.sp. *medicaginis*, but does not reduce disease severity of chitin-containing fungi. *Transgenic Res.* 5: 313-323.

- Samuels, G.J. 1996. *Trichoderma* a review of biology and systematics of the genus. Myco. Res. 100: 923-935.
- Shulaey, V., J. Leon, and I. Rakkin. 1995. Is salicylic acid a translocated signal of systemic acquire resistance in tobacco ? Plant Cell 7: 1691-1701.
- Sivan, A.,Y. Elad and I. Chet., 1984. Biological control effect a new isolate of *Trichoderma harzianum* on *Pythium aphanidermatum*. Phytopathology 74: 498-501
- Silverman, F.P., P.D. Pertracek, D.F. Heiman, C.M. Fledderman, and P. Warrior. 2005. Salicylate activity. 3. Structure relationship to systemic acquired resistance. J. Agric. Food Chem. 53: 9775-9780.
- Sirithorn, P. 2001. Seed disease and seed export: case study of bacterial spot of tomato and fruit blotch of watermelon. KKU plant pathology Bulletin. Siripan off-set Khon Kean. p.69-81.
- Sommich, I. E., and K. Hahlbroch. 1998. Pathogen defense in plants-a paradigm of biological complexity. Plant science 3: 86-90.
- Somogyi, M. 1952. Notes on sugar determination. J. Bio. Chem. 195: 19-23.
- Staskawicz, B.J., F.M. Ausubel, B.J. Baker, J.G. Ellis and J.D.G. Jones. 1995. Molecular-genetics of plant disease resistance. Science 268: 661-667.
- Stasz, T.E., G.E. Harman, and N.F. Weeden. 1988. Protoplast preparation and fusion in two biocontrol strains of *Trichoderma harzianum*. Mycologia 80:141-150.
- Yang, S.S. and Y. Wang. 1999. Protease and amulase production of *Streptomyces rimosus* in submerged and solid state cultivations. Bot. Bull. Acad. Sin. 40: 259-265.
- Yedidia, I., N. Benhamou, and I. Chet. 1999. Induction of defense response in cucumber plants (*Cucumis sativus* L.) by the biocontrol agent *Trichoderma harzianum*. Applied and Environmental Microbiology. 65 (3): 1061-1070.
- Yedidia, I., N. Benhamou, Y. Kapulnik, and I. Chet. 2000. Induction and accumulation of PR proteins activity during early stage of root colonization by the mycoparasite *Trichoderma harzianum* strain T-203. Plant Physiol. Biochem. 38: 863-873.
- Yedidia, I., M. Shores, Z. Kerem, N. Benhamou, Y. Kapulnik, and I. Chet. 2003. Concomitant induction of systemic resistance to *Pseudomonas syringae* pv. *lychrymans* in cucumber by *Trichoderma asperellum* (T-203) and accumulation of Phytoalexins. Applied and Environmental Microbiology 69 (12): 7343-7353.

- Van Loon, L.C. and E.A. Van Strien. 1999. The families of pathogenesis-related proteins, their activities, and comparative analysis of PR-1 type proteins. *Physiol. Molec. Pl. Pathol.* 55: 85-97.
- Van Loon, L.C. and A. Van Kammem. 1970. Polyacrylamide disc electrophoresis of the soluble leaf proteins from *Nicotina tabacum* var. "Samaun" and "Samsun NN" II.Changes in protein constitution after infection with tobacco masaic virus. *Virology* 40: 199-211.
- Van Loon, L.C., Bakker, P.A.H.M., Pieterse, C.M.J., 1998. Systemic resistance induced by rhizosphere bacteria. *Phytopathology.* 36:453-483.
- Van Loon, L.C. and E.A. Van Strien, 1999. The families of pathogenesis-related proteins, their activities, and comparative analysis of PR-1 type proteins. *Physiol. Molec. Pl. Pathol.* 55: 85-97.
- Wang, L.J. and H.L. Shao. 2006. Salicylic acid-induced heat or cold tolerance in relation to Ca^{2+} homeostasis and antioxidant systems in young grape plant. *Plant Sci.* 170(4): 685-694.
- Wasternack, C., I. Stenzel, B. Hause, G. Hause, C. Kutter, H. Maucher, J. Neumerkel, I. Feussner, and O. Miersch. 2006. The wound response in tomato-role of jasmonic acid. *J. Pl. Physiol.* 163: 297-306.
- Zhou, N., T.L. Tootle, F. Tsui, D.F. Klessig, and J. GlaZebrook. 1998. *PAD4* functions upstream from salicylic acid to control defense responses in *Arabidopsis*. *Plant Cell* 10: 1021-1030.



