

Sudarat Siriprachayaphikoup 2013: Application of Plant Inducers Against Leaf Spot Disease Caused by *Alternaria sp.* in Crucifers. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Mr. Chainarong Rattanakreetakul, Dr.sc.agr. 132 pages.

Two fungal isolates as AL1 (*Alternaria spp.*) and AL2 (*Alternaria brassicicola*) were isolated from the symptom of alternaria leaf spot from chinese kale. Fungal pathogenicity was tested to the chinese kale seedlings. AL2 expressed the highest disease symptom after two days of 10^5 conidia/ml inoculated to the tested crucifer plants. Four plant resistant inducer substances as of calcium - boron (CaB) at 50: 5 ppm, benzo-(1,2,3)-thiadiazole-7-carbothioic acid S-methyl ester (BTH) at 200 ppm, chitosan at 1000 ppm and mixture of calcium – boron, silicic acid with salicylic acid (CaBSS) at 70: 5: 270 ppm were treated to the 7 and 25 day olds of chinese kale, pak choy variety Hongtae and pak choy variety Baiyok under greenhouse conditions. Plant inducers were sprayed prior two days before inoculated *A. brassicicola* to the seedling. The result revealed that the treated crucifer with CaB, BTH and chitosan can reduced the symptom of leaf spot disease in compared with the control respectively. The data of the treated crucifers showed the enzyme activity of ppo, pox and pal were induced during 3-5 day after plant inducers spraying. Among the tested plant inducers, CaB treated to both plant stages were expressed higher growth. Under semi field condition, plant inducers were tested to the chinese kale and pak choy variety Hongtae. The plant inducers were sprayed three times at 15, 21 and 28 day after transplant of the seedling and the *A. brssicicola* conidial suspension was sprayed after the second plant inducer application or 23 day after transplant. The result referred that chinese kale treated with BTH was showed the reduction of disease symptom in compared with control. This response was related to the rising up of ppo and pox enzyme activities after the second and third BTH treated to chinese kale. Whereas in pak choy variety Hongtae, the application of chitosan was showed the reduction of disease symptom in compared with other plant inducers. Enzyme activities of ppo, pox and pal in pak choy variety Hongtae were slightly activated after the first application of plant inducers and were grown after the second and third of plant inducers application. Under this condition, the treated of plant inducers as BTH and chitosan to chinese kale and pak choy variety Hongtae have no effect on plant growth.

Student's signature

Thesis Advisor's signature