

Title Effects of the combined treatments of chitinase producing bacterium, 1-MCP and active packaging on crown rot disease and qualities of banana cv. Klui Hom Thong

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Abstract

In our previous study, the *Bacillus cereus* A23 isolated from soil in shrimp farm produced the highest chitinase activity and could inhibit the spore germination of banana crown rot pathogens; *Colletotrichum musae*, *Lasiodiplodia theobromea* and *Fusarium sp.* Therefore in this research, the application of *B. cereus* A23 with postharvest treatments for controlling crown rot disease on banana was tested. Banana crowns were treated with *B. cereus* A23 (5×10^8 cells/ml), 1-MCP (500 ppb) and combinations of *B. cereus* A23 with 1-MCP and Active packaging before or after inoculated with the mixed conidial suspension of pathogens. Control treatment was the pathogens inoculated banana. The results revealed that the combined treatments of *B. cereus* A23 with 1-MCP and Active packaging had higher efficacy to control crown rot disease than that of other treatments. Treatment of *B. cereus* A23 on banana crown before invading with pathogens gave the better result to control disease than that of after pathogen invasion. The combinations of *B. cereus* A23 with 1-MCP and Active packaging suppressed the respiration, ethylene production and color development, moreover, the softening and soluble solids content of banana were lowered. There were no negative effects on the acceptance of consumer (color, flavor and overall acceptance).