

Title Chitosan Treatment for Controlling of Fruit Rot Disease Caused by *Lasiodiplodia theobromea* on Rambutan cv. Rong-Rien

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Abstract

Efficacy of chitosan for controlling of *Lasiodiplodia theobromea*, a causal agent of fruit rot disease on rambutan, was examined *in vitro* and *in vivo*. Effect of chitosan on mycelium growth of *L. theobromea* was evaluated on potato dextrose agar (PDA) incorporated with chitosan at the concentrations of 0 (control), 200,600, 1,000, 1,400 or 1,800 ppm, and PDA mixed with fungicidal benomyl at 1,000 ppm was used as positive control. The result showed that mycelial growth of chitosan treated fungi was reduced compared to that of control. Chitosan at 1,800 ppm delayed the growth of *L. Theobromea* by 69.44%, whilst PDA medium containing benomyl completely inhibited mycelia growth. Effect of chitosan coating at 1,800 ppm for control of rot symptom on wound-inoculated rambutan fruit was conducted at 13°C with 95% relative humidity. The result revealed that disease incidence of chitosan treated fruit was 25% similar to benomyl treatment, while non-treated fruit was 50%. Chitosan treatment also appeared the significantly reduction of disease severity with 12.5% similar to benomyl treatment, while non-treated fruit was 50%. Chitosan treatment also appeared the significantly reduction of disease incidence and disease severity did not relate to the activity of peroxidase and chitinase, the enzymes associated with plant defense, but the increase of these enzymatic activities related to wounding and pathogenic infection.