

Research Title: Control of Multiple Fungicide-Resistant *Phytophthora* spp. Causing Durian Fruit Rot by Some Chitosan

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ABSTRACT

Phytophthora spp. causing disease were obtained from infected para-rubber and durian collected from orchard in Chumphon province. Seventy nine isolates were successfully isolated. Twenty four isolates were randomly selected to be representative of multiple fungicide-resistant test. The resistibility of each isolate to dimethomorph, fosetyl-Al, metalaxyl and mancozeb was detected from the growth of colony by poisoned food technique on V8 agar amended with fungicides at concentrations of 1/2X, 1X, and 2X of field-use recommended rate. The level of resistance to each fungicide was evaluated and grouped into 2 representative phenotype reactions which fungicide resistance (Fg^R) and able to grow on each fungicide at \geq field-use recommended rate and sensitive (Fg^S) for the isolate that could grow on at $<$ field-use recommended rate. The 7 isolates were classified as the Fg^R to metalaxyl and 5 isolates were Fg^R to dimethomorph. The 3 isolates from fruit rot of durian were multiple fungicide resistance ($MuFg^R$) to dimethomorph and metalaxyl. Moreover, study the effect of low, medium and high molecular weight chitosan at 0 (control), 500, 1,000 and 2,000 ppm were to evaluate the *in vitro* on mycelial growth of *Phytophthora* spp. causing para-rubber and durian diseases by poisoned food technique and on sporangium production and zoospores release by culture disc technique. The results show that low, medium and high molecular weight chitosan at 2,000 ppm. were the most effective treatment for mycelial and sporangium inhibition percentage. However, all chitosan treatments were no significant on zoospores release.

Keywords: *Phytophthora* spp., durian, chitosan, multiple fungicide resistance