

## Determination of Metalaxyl Efficacy in Controlling Phytophthora palmivora Infection of Durian Using Bioassay

**Authors :** Supawadee Phetkhajone, Wisuwat Songnuan

**Abstract :** Metalaxyl is one of the most common and effective fungicides used to control Phytophthora palmivora infection in durian (Durio zibethinus L.). The efficacy of metalaxyl residue in durian under greenhouse condition was evaluated using bioassay. Durian seedlings were treated with 2 methods of application, spraying, and soil drenching of metalaxyl, at recommended concentration (1000 mg/L). Mock treated samples were treated with 0.1% Tween20 and water for spraying and soil drenching methods, respectively. The experiment was performed in triplicates. Leaves were detached from treated plants at 0, 1, 7, 15, 20, 30, and 60 days after application, inoculated with metalaxyl-resistant and metalaxyl-sensitive isolates of P. palmivora, and incubated in a high humidity chamber for 5 days at room temperature. Metalaxyl efficacy was determined by measuring the lesion size on metalaxyl treated and mock treated samples. The results showed that metalaxyl can control metalaxyl-sensitive isolate of P. palmivora for at least 30 days after application in both methods of application. The metalaxyl-resistant isolate was not inhibited in all treatments. Leaf samples from spraying method showed larger lesions compared to soil drench method. These results demonstrated that metalaxyl applications, especially soil drenching methods showed high efficacy to control metalaxyl-sensitive isolates of P. palmivora, although it cannot control metalaxyl-resistant isolates of P. palmivora in all treatments. These qualitative data indicate that metalaxyl may suitable to control metalaxyl-sensitive isolates of P. palmivora infection.

**Keywords :** bioassay, degradation, durian, metalaxyl

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