

THE USE OF LEMONGRASS OIL AGAINST ANTHRACNOSE POSTHARVEST DISEASE OF BANANA (*MUSA ACUMINATA* L.)

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Banana suffers from several postharvest diseases due to fungal infections during storage. One of the damaging postharvest diseases of banana is anthracnose caused by *Colletotrichum* spp. This disease significantly damages the fruit's marketability. A rapid development of alternative approaches to postharvest disease control is crucial to managing the massive amount of bananas produced. Treatments in the form of essential oils such as cinnamon oil, clove oil, and lemongrass oil (LO) have been developed to control postharvest decay, insect infestation, and alleviate storage disorders in a wide range of fresh produce. The potential of LO in controlling anthracnose disease of banana was first screened through poison food technique. Actively growing mycelia plugs of *Colletotrichum musae* were inoculated on potato dextrose agar (PDA) plates amended with seven different LO concentrations (0.05%, 0.075%, 0.10%, 0.25%, 0.50%, 0.75%, and 1.0%). All LO concentrations resulted in a significant inhibition of mycelia growth except for the control plate. Thus, we studied the effects of LO at the lowest concentration (0.05%) on banana fingers inoculated with *C. musae*. Results showed that the application of 0.05% LO by dipping method caused a smaller lesion on the inoculated banana fingers compared to the control treatment by using sterile distilled water for up to 14 days of incubation. However, the difference in lesion size was not significantly different. This study suggested that LO has the potential to reduce anthracnose disease severity on bananas. Therefore, to obtain significant results, the concentration of LO applied should be increased to more than 0.05%. The application of LO is more environmentally safe and economical, and serves as an ideal alternative to synthetic fungicides as a control strategy.

Keywords: banana, lemongrass oil, anthracnose, *Colletotrichum musae*, disease severity