

Suputra Jamkratoke 2006: Inhibition by Zingiberaceous Plant Extracts Against Postharvest Disease Fungi. Master of Science (Agriculture), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Mr. Udom Farungsang, M.S. 79 pages.
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Extracts obtained from 17 kinds of Zingiberaceous plants, crudes from all and volatiles from 3 kinds of them were tested for their unfavourable effects towards radial growth and spore germination of 6 postharvest disease fungi, *Colletotrichum capsici*, *Colletotrichum gloeosporioides*, *Dothiorella* sp., *Lasiodiplodia theobromae*, *Pestalotiopsis* sp. and *Pythium aphanidermatum*. The experiment on crude extracts demonstrated severe inhibition of radial growth of the tested fungi grown on PDA supplemented with 10,000 ppm *Zingiber officinale* or *Zingiber montanum* extract. Noticeable inhibition of germination was observed on *C. capsici*, *C. gloeosporioides* and *Pestalotiopsis* sp. when the fungal spores were allowed to germinate among 25,000 ppm *Z. officinale*, *Amomum xanthioides*, *Alpinia galangal*, *Curcuma zedoaria* or *C. xanthorrhiza* extract, or 5,000 ppm *Boesenbergia pandurata* extract. The experiment on volatile extracts demonstrated antagonistic effects provided by *B. pandurata* and *Z. officinale* oils. Strong inhibition of growth was appeared when the tested fungi were allowed to grow on PDA supplemented with 1,000 ppm extracts. Dramatic inhibition of germination was observed on *C. capsici*, *C. gloeosporioides* and *Pestalotiopsis* sp. when the fungal spores were exposed to at least 100 ppm extracts. Antifungal effects of some synthetic chemicals as found to be constituents of volatiles obtained from Zingiberaceous plants including with eugenol, camphene, camphor, eucalyptol, geraniol and commercial camphor were investigated. Inhibition of radial growth was presented by the tested fungi exposed to 500 and 1,000 ppm of eugenol or geraniol supplemented in PDA. Germination of *C. capsici*, *C. gloeosporioides* and *Pestalotiopsis* sp. were very poor when the fungal spore were exposed to 1,000 ppm eugenol.

Reduction in anthracnose lesion resulted by unwounded inoculation on detached mango fruit was significant by 500 ppm eugenol compared to control treatment, geraniol or *Z. officinale* oil applied 12 hrs after inoculation with *C. gloeosporioides*.

Student's signature

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