

Thesis Title Efficiency of Chemical Compounds Extracted from Peel and Seed of
Longan Fruit against Postharvest Pathogens

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M.S. Postharvest Technology

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Abstract

Antifungal and bacterial compounds from peel and seed of longan (*Dimocarpus longan* Lour.) were extracted with ethanol 95 % at 4, 3, 2, 1 week before harvesting, harvesting and after harvested three days. After evaporation of the solvent under reduced pressure, the crude extracts from peel and seed became high viscosity with green and brown in colour, respectively.

The extract induced abnormal growth of germ tube of *Pestalotiopsis* sp., appressorium formation of *Colletotrichum* sp. and delayed spore germination of *Cladosporium cladosporioides*.

The fruit treated with the extract from seeds of the three days after harvesting stage seemed to give better diseased control than other stages. However the percentage of infected fruit is non significantly different from the control. The disease became more severe when the concentration of the extract was increased. Using TLC-bioassay technique with Hexane :

Ethylacetate : Methanol at 60 : 40 : 1 as a developing solvent the inhibition band against *Cladosporium cladosporioides* was at Rf 0-0.1 for both the peel and seed crude extracts. When the band was extracted and developed again by methanol the Rf of peel and seed extracts were 0.7-0.83 and 0.63-0.83, respectively. The extract from the peel of one week before harvesting and from the seed at three days after harvesting gave the widest inhibition band.

The chemical structure of the compounds extracted from the inhibition bands were analysed by H^1 -NMR, GC-MS, IR and UV spectroscopy. It revealed that the antifungal compounds were aliphatic compounds. Minimum Inhibitory Concentration (MIC) against *Cladosporium cladosporioides*, *Lasiodiplodia* sp. and *Erwinia carotovora* was equal i.e. 15.5 $\mu g/\mu l$ for the active compounds from the seed and 35.0 $\mu g/\mu l$ for the peel.