ANTIFUNGAL ACTIVITY OF ESSENTIAL OILS AGAINST POST-HARVEST FUNGAL PATHOGENS OF TROPICAL FRUITS

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This project report is submitted in partial fulfillment of the requirement of the degree of Bachelor of Science in Agrotechnology (Post-Harvest Technology)

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ABSTRACT

Five essential oils of *Citrus aurantifolia Swingle, Citrus limon* (L.) Burm. f., *Cymbopogon citratus* (DC.) Stapf, *Cestrum nocturnum* L., and *Michelia champaca* Linn. were evaluated to determine the suitable essential oil and its concentration on inhibition of post-harvest fungal pathogens of tropical fruits, i.e. fungi *Fusarium oxysporum* (Fo), *Fusarium oxysporum* (Fo2) and *Glomerella cingulata* (Gc) which isolated from snake fruit, papaya and wax apple respectively under laboratory conditions. The highest and broadest activity was shown by *C. citratus* oil which can cause fungicidal activity to all fungi tested. The oil was extremely fungitoxic against *F. oxysporum* (Fo), *F. oxysporum* (Fo2) and *G. cingulata* (Gc) at fungicidal MIC (Minimum Inhibitory Concentration) of 1.2 , 0.8 and 1.0 $\mu l\ ml^{-1}$, respectively. Moderate active essential oils were achieved by *M. champaca* and *C. nocturnum* at fungistatic and fungicidal concentration of 0.8 - 6.4 $\mu l\ ml^{-1}$. In contrast, both citrus oils were found to be the least effective with MIC of 6.4 $\mu l\ ml^{-1}$ - 38.4 $\mu l\ ml^{-1}$.