

Title *In vitro* antifungal activity of Malaysian Herb Essential Oil's against fruit spoilage fungi on dragon fruit and pineapple

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Abstract

In Malaysia, there are many herbs that exhibit antimicrobial activity and may be used an alternative method for control of postharvest diseases of fruit and vegetables. Therefore the objective of this study was to investigate antifungal index of essential oil of Malaysian herbs against fungi generally encountered in dragon fruit and pineapple spoilage. The screening of Malaysian herbs (*Cymbopogon nardus*, *Citrus hystrix*, and *Piper betel*) was carried out to investigate their in vitro antifungal activity against *Collectotrichum* sp., *Fusarium* sp., and *Culvularia* sp. All the essential oil exhibited antifungal activity against all test fungi. The antifungal activity of oils increased with an increase in concentrations. Moreover, essential oil of *Piper betel* at the 5% concentration caused complete inhibition, 100% antifungal index, of the growth of *Collectotrichum* sp, *Fusarium* sp., and *Culvularia* sp., respectively, while the other essential oils showed antifungal index ranging from 50 to 90%. The results revealed that the essential oil from Malaysia herbs could be used as source of natural antifungal agents which may be added directly into treatment as a coating or incorporated in packaging materials. More research is required to explore the antifungal activity of other Malaysia herbs.