ISOLATION AND IDENTIFICATION OF ENDOPHYTIC FUNGI FROM *Melastoma malabathricum* L. FOR ANTIFUNGAL ACTIVITY

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ABSTRACT

ISOLATION AND IDENTIFICATION OF ENDOPHYTIC FUNGI FROM *Melastoma malabathricum* L. FOR ANTIFUNGAL ACTIVITY

Medicinal plant has been used in folk medicine and found to harbour endophytes. Endophytes are organisms that colonize internal part of plant tissue without causing any harm to its host where it is producing bioactive compound that can be used for antibacterial and antifungal activity. This study aims to evaluate the antifungal activity of endophytic fungi isolates from *Melastoma malabathricum*. A total of 35 endophytic fungi were isolated from three different parts of *Melastoma malabathricum* L. including leaves, stems and roots. Based on the morphological characteristic, 35 isolated endophytic fungi were group into 6 different isolates namely SSM1, SRM2, SRM3, SRM4, SSM5, SLM6. Colonization frequency analysis demonstrated that, leaf showed the highest distribution of isolated endophytic fungi with 38.90%. SRM2 isolate identified under phylum Zygomycota as it showed edge colony with white colour characteristic on PDA agar and consists of aseptate hyphae with unbranching sporangiospores. SLM6 isolate showed septate hyphae and has conidiospores and demonstrated black-greyish colour with white concentric ring belong to phylum Ascomycota. However, SSM1, SSM5, SRM3, and SRM4 remains unidentified. Antifungal activity by using *in vitro* dual culture method demonstrated that all isolated endophytic fungi from *Melastoma malabathricum* exhibited antifungal activity against plant pathogenic fungi, *Colletotrichum gloeosporioides.* The SSM1 and SSM5 endophytic fungi isolate showed a significantly differences with highest inhibition radial growth percentage against C. *gloeosporioides* with 57.89% and 52.63%, repsctively. Meanwhile, the SRM4 endophytic fungi isolate exhibited the lowest percentage of inhibition radial growth against *C. gloeosporoides*. To our concern, present study is the first study reported the antifungal activity of endophytic fungi isolates from *Melastoma malabathricum.* Finding in this study serve as a basic information for antifungal activity of endophytic from *Melastoma malabathricum* fungi against plant pathogenic.