

Kamonwan Sreeta 2015: Efficacy of Crude Extracts of Endophytic Fungi Isolated from Mangrove Plants Collected at Kungkraben Bay, Chanthaburi Against Plant Pathogenic Fungi. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Assistant Professor Tida Dethoup, Ph.D. 98 pages.

Collection of 40 species of mangrove plants from Kungkraben Bay, Chanthaburi, Thailand, resulted in the isolation of a wide collection of fungal isolates, mainly endophytic fungi (372 isolates), from branches and leaves.

Screening of the antagonistic effect from 20 selected endophytic fungi against 10 phytopathogenic fungi, using the Dual Culture method, led to the identification of 6 promising fungal isolates. The fungal isolates, taxonomically identified as belonging to the genera *Neosartorya* sp. (KUFA 33, KUFA 38, KUFA 46 and KUFA 47), *Talaromyces trachyspermus* (KUFA 45) and *Fusarium* sp. (KUFA 48), displayed relevant antagonistic effect causing more than 70% of mycelial growth inhibition for the majority of the plant pathogenic fungi.

Additionally, five endophytic fungi ethyl acetate crude extracts were further evaluated for their antifungal activities using the Dilution Plate method, and the results showed that *T. trachyspermus* (KUFA 35) was the most active extract, followed by *Eurotium chevalieri* (KUFA 39) and *Neosartorya* sp. (KUFA 41) crude extracts, also displaying strong inhibitory mycelial growth activity.

*Neosartorya* sp. (KUFA 41) fractionation resulted in the collection of 288 fractions, grouped into 119 fractions, after evaluation of their chromatographic profile through Thin Layer Chromatography analysis. Further mycelial growth inhibitory activity was evaluated and 42 fractions displayed antifungal activity against the plant pathogen *Colletotrichum capsici*, at 100,000 ppm, using the Well Disc method. Fraction 136 was identified as the most active, generating a maximum clear zone, followed by fractions 63 and 88.

An unidentified compound isolated from fraction 119, was tested for its antifungal activity against 10 plant pathogenic fungi, but displayed no activity.

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Student's signature

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Thesis Advisor's signature