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| <b>Dissertation Title</b> | Diversity and Taxonomy of Dothideomycetes on Woody Litter in Northern Thailand |
| <b>Author</b>             | Saranyaphat Boonmee                                                            |
| <b>Degree</b>             | Doctor of Philosophy (Biosciences)                                             |
| <b>Advisor</b>            | Assoc. Prof. Dr. Kevin David Hyde                                              |
| <b>Co-Advisor</b>         | Assist. Prof. Dr. Ekachai Chukeatirote                                         |

## ABSTRACT

Dothideomycetes is one of the largest fungal groups mainly characterised by the distinct “bitunicate” asci feature. Most Dothideomycetes are saprobes, endophytes and pathogens; besides, they can also be present as fungicolous, coprophilous or lichenicolous. In this study, we aimed to investigate the diversity of saprobic Dothideomycetes from dead wood in northern Thailand. In Thailand, the study of this fungal group is limited and thus our data are expected to provide an insight on Dothideomycetes’s taxonomy.

Initially, the fungal strains isolated from dead wood specimens were morphologically characterised and those showing the “bitunicate” characteristics were further studied using multigene analysis (i.e., ITS, LSU, RPB2, SSU and TEF1- $\alpha$ ). As a result, classification and phylogenetic relationships of Thai Dothideomycetes were presented.

Based on this study, we introduced the new order *Tubeufiales* on the basis of the family *Tubeufiaceae*. This order was to accommodate the fungal group distinct

from the *Pleosporales*. Besides, we also revised the taxonomic classification within the family *Tubeufiaceae*. For this, 15 genera were included in this family. Twelve new species were discovered from this study; these included *Acanthostigma chiangmaiensis*, *Acanthostigma fusiforme*, *Acanthostigma lignicola*, *Acanthostigma piniraiensis*, *Chlamydotubeufia huaikangplaensis*, *Chlamydotubeufia khunkornensis*, *Helicoma chiangraiense*, *Helicoma fagacearum*, *Helicoma siamense*, *Thaxteriella inthanonensis*, *Tubeufia chiangmaiensis* and *Tubeufia khunkornensis*.

The new family *Kirschsteinietheliaceae* was also proposed based on morphological and molecular phylogeny. This family was founded to accommodate the fungal taxa grouping with *Kirschsteiniethelia aethiops*. Two new species *Kirschsteiniethelia emarceis* and *Kirschsteiniethelia lignicola*, including their asexual states were described and illustrated. The new genus *Halokirschsteiniethelia* was also introduced to accommodate *Kirschsteiniethelia maritima* and placed in the *Mytilinidiaceae* (*Mytilinidiales*).

Additionally, the type species of nine Dothideomycetes families were studied using the herbarium type specimen. Their detailed descriptions were provided as well as a key to genera of accepted species.

**Keywords:** Bitunicate/Phylogeny/Saprobic/Sexual and Asexual States/Type Species