Dissertation Title	Taxonomy and Phylogeny of *Phyllosticta*
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ABSTRACT

Phyllosticta is one of the major plant pathogenic genera, whose species have a worldwide distribution. *Phyllosticta* species are responsible for numerous diseases including leaf spots and black spots on fruits. Several species have also been reported as saprobes and/or as endophytes of many host plants. Species recognition in *Phyllosticta* has historically been based on morphology, culture characters and host association. Although there have been several taxonomic revisions of this genus, there is still considerable confusion in the classification and identification of *Phyllosticta* and *Guignardia* species. This thesis provides additional knowledge on the taxonomy and relationships of *Phyllosticta* species based on morphological and phylogenetic data.

The diversity of the genus *Phyllosticta* in Thailand was investigated in this study. Plant tissues (i.e., leaves and fruits) were collected and used to isolate the *Phyllosticta* species. Their host and fungal mode of life were also recorded. Of 43 *Phyllosticta* isolates, 39 isolates were identified as *P. capitalensis*; other species were also present including 2 isolates of *P. cordylinophila*, 1 isolate of *P. citrimaxima* sp. nov. and 1 isolate of *P. mangiferaceae* sp. nov.

I then focused on *P. capitalensis* taxonomy due to its common occurrence (based on this study). The morphology of the species was observed and recorded; *P. capitalensis* CPC20252 was fully described as a representative for this species in this study. The phylogeny was further explored using multigene analysis (ITS, ACT and TEF). Apart from the data of Thai *P. capitalensis*, sequences of other *P. capitalensis* strains from the CBS were included. Based on the phylogenetic tree, the data revealed that *P. capitalensis* was monophyletic exhibiting a broad host range and worldwide distribution.

In addition, my study revealed 15 new species (i.e., *Phyllosticta citrimaxima* sp. nov. and *P. mangiferaceae* sp. nov. were isolated from Thailand) based on analysis of multigene; ITS, LSU, ACT, TEF and GPDH sequence data for 160 *Guignardia*/*Phyllosticta* isolates. This finding also confirmed that species identification in *Phyllosticta* cannot be based only on morphological characters. Twelve species of *Phyllosticta* were also investigated and thus designated as epitypes (based on phylogenetic tree analysis).

Finally, several type species of *Guignardia* and *Phyllosticta* were studied solely by morphological characters. Their detailed descriptions and illustrations are given with an expectation to use as a key reference for future study.

Keywords: Endophytes/Guignardia/Morphology/Molecular Phylogeny/Multi-Gene Analysis/Plant Pathogenic Fungi/*Phyllosticta*/Secondary Metabolites