CHAPTER 5
CONCLUSION

Tar spot disease, caused by obligate parasites on plants, is visually distinctive. There are several different fungi that can cause tar leaf spot diseases. The phrase “Tar spot fungi” has been loosely used in taxonomy and these fungi are morphologically defined by deep shiny black stromata of various shapes with epidermal clypeus, perithecia strongly melanised that are superficial, erumpent or immersed in the host tissue. These fungi are mainly identified into the fungal order Phyllachorales. This order is highly diverse in the tropics and associated with wide host range.

This study has emphasized on the diversity of tar spot fungi in Northern Thailand, focusing on Chiang Mai province. The survey and collection were conducted during August 2015 – May 2017. A total of 67 collections were obtained from 45 plant species belonging to6 families, including Cyperaceae, Fabaceae, Moraceae, Musaceae, Phyllanthacea and Poaceae. Fungal isolates grouped by morphological characteristics resulted in 33 morphospecies representing four genera including Guignardia (1 isolate), Ophiodothella (1 isolate), Phyllachora (63 isolates, 29 species) and Rehmiodothis (2 isolates). Of these, 12 species of *Phyllchara* are being reported from Thailand for the first time, namely *Phyllachora amphibola* (on *Thysanoleana maxima*), *P. cynodontis* (on *Brachiaria reptans* and *Cynodon dactylon*), *P. fici-ocbispora* (on *Ficus religiosa*), *P. fimbristylidis* (on *Vetiveria zizanioides*), *P. gloiama* (on *Echinochloa colona*), *P. infectoria* (on *F. religiosa*), *P. koondrookensis* (on *Chloris barbata*), *P. leucospila* (on *Phyllanthus reticulatus*), *P. oryzopsidis* (on *Digitaria adscendens*), *P. oxsyspora* (on *Imperata cylindrical*), *P. pteracarpi* (on *Pterocarpus indicus*) and *P. punctum* (on *Eleusine indica*). To the best of our knowledge, this is the first comprehensive study on diversity of Tar spot disease and the causal fungi from Northern Thailand. In this study, the fungal identification was primarily done based on morphology, not delimited by the host plants. This may have led to over-splitting of species. Futher studies are required to confirm the phylogenetic positions of the Tar spot-like fungi included in this study and evaluate the phylogenetic utility of the morphological and ecological characteristics.