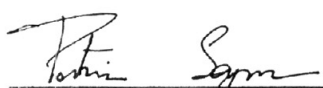
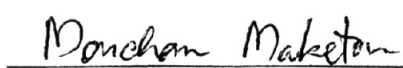


Patcharin Sawangwan 2006: Efficacy of Entomopathogenic Fungi in Controlling Subterranean Termite (*Coptotermes gestroi*) (Wasmann). Master of Science (Biology), Major Field: Biology, Department of Zoology. Thesis Advisor: Associate Professor Monchan Maketon, Ph.D. 80 pages.  
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Study on six entomopathogenic fungi strains (class Deuteromycetes) for controlling subterranean termite *Coptotermes gestroi* (Wasmann) (Family Rhinotermitidae: Order Isoptera), which is the most serious household pest in urban landscape in Thailand showed *Metarhizium anisopliae* (CKM048) to have superior efficacies to *M. anisopliae* (BCC4541), *M. anisopliae* (BCC4951), *Beauveria bassiana* (CKB048), *M. flavoviride* (BCC1380) and *Paecilomyces lilacinus* (BCC6121), respectively. Therefore, it was selected for further testing. The optimum growing temperature of *M. anisopliae* (CKM048) ranged between 28 – 30 °C. The efficacy in controlling termite increased significantly with increased conidia concentration. The highest concentration at  $3 \times 10^8$  conidia/ml resulted in an average mortality of the termites at 89 percent. There were no significantly different in mortality percentage among the four fungi generations. Further experiment was conducted to test the damage of rubber wood from termite. Samples were placed in the box filled with sterile vermiculite/sand and 300 subterranean termites. The effectiveness in controlling by spraying method was better than the baiting method. The former method at the concentration of  $6 \times 10^8$  conidia/ml showed no remaining termites after one month. In terms of growth development, scanning electron microscope revealed continuous development of *M. anisopliae* (CKM048), classified based on growth as adhesion, germination, and penetration stages found within 1 – 48 hrs.; colonization stage, a stage which the termites were covered with mycelium found within 96 – 168 hrs.; and the last stage, conidiogenesis stage took place within 216 – 336 hrs. This stage, the conidia of fungus spreaded into other termites.

  
Student's signature

 29 May 2006  
Thesis Advisor's signature