

## C 726376 : MAJOR MICROBIOLOGY  
KEY WORD:

*Termitomyces* spp. / FUNGUS GARDEN / SPHERULES

OMSIN SATTAYAKUL : CHARACTERISTICS AND PHYSIOLOGY OF FUNGIS ISOLATED  
FROM TERMITOMYCES MUSHROOM . THESIS ADVISOR : ASSO. PROF. PRAKITSIN

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*Termitomyces* mushrooms from Nakornpathom , Nonthaburi , Nakornsawan , Karichanaburi , Yasothorn and Ubolrachatani provinces of Thailand were surveyed , collected and identified as *Termitomyces microcarpus* ( Berk. et Broom ) Heim , *Termitomyces striatus* ( Beeli ) Heim , *Termitomyces globulus* Heim & Goossen , *Termitomyces robustus* ( Beeli ) Heim and *Termitomyces tyleranus* Otieno respectively .

The mycelium isolated from all 7 species of *Termitomyces* mushrooms was grown better on Czapek Dox Agar mixed with ground banana leaf than on any of following media : Malt Extract Agar , Potato Dextrose Agar , Czapek Dox Agar , or Czapek Dox Agar mixed with rice straw , or sugarcane leaf and coconut leaf .

Environmental factors that affect the mycelium growth of all 7 species such as temperature , pH , carbon and nitrogen sources , were studied using the Completely Randomized Design in order to determine conditions for optimum growth . The results showed that mycelium of all 7 species grew best on Czapek Dox Agar at 30 °C , with pH range of 6 - 7 , and using glucose 30 g/l as the carbon source and peptone 6.0 g/l as nitrogen source .

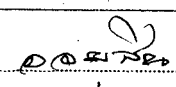
Comparison study between *Termitomyces microcarpus* fungus garden , which is mutualistic with termite *Odontotermes proformosanus* Shiraki and pure fungus culture isolated from fungus garden by simple light microscope and Scanning Eletron Microscope showed the spherules that distributed on fungus garden and in pure fungus culture . The different phenomenon showed that mycelium grew only on spherules of pure fungus culture . Spherules were developed from cluster of mycelia and the end of mycelia were swollen . The spherules were collapsed when it reached 28 days . When removal termites from *Termitomyces* fungus garden found that *Xylaria* will developed and grown over fungus garden .

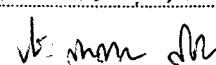
Ecological study on growth condition of *Termitomyces microcarpus* in fungus garden found that it grew at temperature , moisture content , pH , organic carbon and organic nitrogen of fungus garden were 29 °c , 57 % , 4.3,35 % and 1.7% respectively . Bacteria , fungi and actinomycetes are microorganisms that were found in the fungus garden and soil around fungus garden . There were no significant differences in number of microorganisms from these two samples .

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