

BIODIVERSITY OF BRYOPHYTE AND WILD MUSHROOM TO DEVELOP AS ECOTOURISM AT NATURAL ROUTES IN CHAE-SORN NATIONAL PARK OF LAMPANG PROVINCE

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ABSTRACT

The biodiversity of bryophyte and wild mushroom at Chae-sorn National Park in Lampang Province was studied along natural routes of Chae-sorn and Mae-peag waterfalls where there were physical diversity with varieties of trees and various landscapes. The survey of bryophyte and wild mushroom was conducted in the rainy season from June to August 2007. The study was found that the biodiversity of bryophyte were 32 species, 26 genera, and 22 families including 25 species of mosses of *Fissiden*, *Hypnum* and *Octoblethodium* for example mostly grown on soil, tree and near waterfall. 6 species of liverworts mostly grown on soil near waterfall of *Riccia*, *Cyathodium* for example ; and 1 species of hornwort grown on soil near waterfall was *Folioceros* . Biodiversity of wild mushroom showed that 112 species were found which composed of two subdivisions: Ascomycotina and Basidiomycotina. Subdivision Ascomycotina was classified into 6 families 9 genera and 11 species, while subdivision Basidiomycotina was classified into 30 families 62 genera and 101 species. It can be concluded that both of Chae-sorn and Mae-peag waterfall natural routes are suitable for ecotourism routes because of their several biodiversity of bryophyte and wild mushroom.

Keywords: Bryophyte, Mushroom, Ecotourism, Chae-sorn National Park

INTRODUCTION

Cheasorn (pronounced “Jae Zorn”) National Park is a rich mountainous forest located in the Northeast of Lampang province comprising the Pee Paan Naam western mountain range. This range forms the border between the provinces of Lampang and Chiangmai and contains Doi Langka, at 2,031 meters above sea level, the third highest mountain in Thailand. It is situated in the districts of Muang Paan and Chae Hom and covers an area of about 768 square kilometers. The park has won awards from the Tourism Authority of Thailand and is exceptionally clean. The Park has many interesting features including waterfalls, caves and its famous hot springs. Along with many species of fauna and flora (Department of National Park, 2004). The bryophyte (division bryophyte; 891 genera, 23,300 species (Smith, 1955) include liverwort hornwort and mosses are nonvascular tissue, they lack true roots, stem and leaf. Instead, they have rhizoids, stemlike structures and leaflike. Liverwort and hornwort are small flattened, lobed bodies and distinct top on surface with numerous rhizoids into the soil, moss has a stemlike structure with leaflike. The bryophyte adapted to living in moist location on land, they colonize rocks and slowly convert them to soil that can be used for the growth of other organism. Another hand bryophyte can used air pollution indicator. (Ye J. *et. al*, 2004) Mushroom are most saprophytic decomposers that assist in the recycling of nutrients in ecosystem. The bodies are made up of filament septate hyphae and produce spores in basidiospore. Mushroom growing on lawns

and the shelf or bracket fungi found on dead trees, they classified in division eumycota in 2 subdivision ascomycotina and basidiomycota that most of mushroom. The objective of this are: to study diversity of bryophyte and wild mushroom of natural routes of Chae-sorn and Mae-peag waterfall at Chae-sorn Nation Park, Lampang province to develop and potential for ecotourism

MATERIALS AND METHODS

The survey of the bryophyte and wild mushroom along natural routes of Chae-sorn (Fig.1A) and Mae-peag waterfalls (Fig.1B) at Chae-sorn Nation Park, Lampang Province was conducted in the rainy season from 1 June 2007 to 31 August 2007. Collecting was done one per month and effort was made to collect both plantlet and spore of all species there.



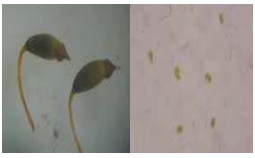


Figure 1 Map of natural routes of Chae-sorn (A) and Mae-peag waterfalls (B).)Chae-sorn National Park, 2550(

RESULTS AND DISCUSSION

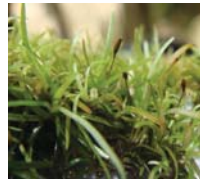
The results of this study showed that within the natural routes of Chae-sorn and Mae-peag waterfalls were of bryophyte and of wild mushroom. The biodiversity of bryophyte were 32 species, 26 generas, and 22 families including 25 species of mosses of *Fissiden*, *Hypnum* and *Octoblethodium* for example mostly grown on soil, tree and near waterfall. 6 species of liverworts mostly grown on soil near waterfall of *Riccia*, *Cyathodium* for example ; and 1 species of hornwort grown on soil near waterfall was *Folioceros* (Fig. 2 and 3).

Biodiversity of bryophyte in Thong Pha Phum National Park, Thailand hav 110 species 77 genera and 40 families.(Boonkerd, 2006; Hickey, 2003). In China diversity of floor bryophyte communities in Bogda mountains have 186 species 73 genera and 32 families. (Zhang Y. *et. al*, 2003)



Fissiden javanicus
Fissidens sp.

Hypnum sp. and spore



Octoblepharum sp.
and spore

Philonotis hastata
Racopilum sp.

Figure 2 Type of Mosses and their spore



Riccia fluitans (A)

Cyathodium sp. (B)



Pallavicinia lyellii (C)

Folioceros fuciformis (D)

Figure 3 Type of Liverwort (A – C) and Hornwort (D)

Biodiversity of wild mushroom showed that 112 species were found which composed of two subdivisions: Ascomycotina and Basidiomycotina. Subdivision Ascomycotina was classified into 6 families 9 genera and 11 species, while subdivision Basidiomycotina was classified into 30 families 62 genera and 101 species that separating by shape have 9 groups ; mushroom with or without veils, shelf-like or poroid fungi, tree-like or club shape, crustlike or spreading, cup or disk shape, ball shape, jelly fungi, pleurotoid fungi and theleporoid or stinkhorn. (Fig. 4).

Wild mushroom diversity in another nation park such as Doi Suthep-Pui national park, Chaingmai were 60 species (Wanida, 1998) and Thud mog national park, Patchaboon were 755 species 62 genera and 26 families (Chaloea, 2000)



Figure 4. The 9 groups of wild mushroom on natural routes of Chae-sorn and Mae-peag waterfalls at Chae-sorn National Park in Lampang Province

A: Mushroom shape; [A1: Mushroom with Veils (A1.1: *Pholiota flammans*; A1.2: *Armillaria sp.*; A1.3: *Amanita sp.*; A1.4: *Leucocoprinus birnbaumii*); A2: Mushroom without Veils (A2.1: *Hygrocybe sp.*; A2.2: *Marasmius sp.*; A2.3: *Coprinus disseminatus*; A2.4: *Clitocybe sp.*); A3: Boletoid (A3.1: *Favolaschia tonkinensis*; A3.2: *Tricoloma sp.*)]

B: Shelf – like and Poroid Fungi; [B.1: *Trametes sp.*; Fungi B.2: *Trametes sp.*; B.3: *Microporus xanthopus*]

C: Tree – like or Club shape; [C.1: *Clavulinopsis sp.*; C.2: *Pterula sp.*; C.3: *Geoglossum sp.*]

D: Crustlike or spreading; [D.1: *Meruliopsis corium*; D.2: *Meruliopsis sp.*; D.3: *Datronia sp.*]

E: Cup or disk shape [E1 :Bird’ s Nest Fungus (E1.1: *Cyathus olla* ; E1.2: *Cyathus rugispermus*); E2: Cup (E2.1: *Cookeina tricholoma* ; E2.2: *Sarcoscypha sp.*]

F: Ball shape; Puff Balls (F.1: *Lycoperdon sp.* ; F.2: *Lycoperdon sp.* ; F.3: *Astraeus sp.*)

G: Jelly Fungi (G.1: *Auricularia sp.* ; G.2: *Calocera cornea* ; G.3: *Tremella fuciformis*)

H: Pleurotoid Fungi (H.1: *Pleurotus pulmonarius* ; H.2: *Pleurotus djamor* ; H.3: *Schizophyllum commune*)

I: Other shapes [I1: Theleporoid and Stereoid Fungi (I1.1: *Podocypha nitidula* ; I.12: *Stereopsis radicans*); I2: Stink Horn (I2.1: *Phallus rubicundus* ; I2.2: *Dictophora indusiata*)]

CONCLUSION

The study found that the natural routes of Chae-sorn and Mae-peag waterfalls to be appropriate and have potential in ecotourism. The two natural routes had perfect and diversity of bryophyte and wild mushroom resources.

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