

Chulalack Sitthichoptham 2014: Morphology and Diversity of *Sphagnum* L. in Phu Luang Wildlife Sanctuary, Loei Province. Master of Science (Botany), Major Field: Botany, Department of Botany. Thesis Advisor: Miss Nuttha Sanevas, Ph.D. 149 pages.

Morphology and anatomy of *Sphagnum* L. were studied for taxonomic identification using 152 samples of the *Sphagnum* specimens. Some environmental factors on distribution of *Sphagnum* were studied from soil samples. Both *Sphagnum* specimens and soil samples were collected from Phu Luang Wildlife Sanctuary, Loei province for 31 sampling sites along 4 routes: Pha-Talern, Koknokkraba-Lansuriyun, Kok-Prommajun and Pakdum. Those sampling sites represent the vegetation types such as rock platform, open area, evergreen mountain forest, pine and shrub forest. Surveys and sampling were conducted from July 2011 to January 2013.

The *Sphagnum* spp. were identified based on the characteristics of stem cortex, branching, shapes of stem and branch leaves, pore characters and their positions on hyaline cells together with shapes of living cells in branch leaf (cross section). There are 4 sections and six species of *Sphagnum* i.e. section *Acutifolia* (*S. junghuhnianum* Dozy & Molk.), section *Cuspidata* (*S. cuspidatum* Müll. Hal.), section *Sphagnum* (*S. palustre* L. and *S. perichaetiale* Hampe.), section *Subsecunda* (*S. subsecundum* Nees ex Sturm) and one unidentified species.

The environmental factors affecting distribution of *Sphagnum* were examined from soil samples compared between the areas covered and non-covered with *Sphagnum*. The results showed that the areas covered with *Sphagnum* had significant higher content of sand than silt and clay which were 87.96%, 7.38% and 4.66%, respectively. The content of NaCl (0.052 $\mu\text{s}/\text{cm}$) was lower than that of non-covered with *Sphagnum* area. Furthermore, *Sphagnum* spp. were usually found in the open areas with low crown cover. The other factors such as the height above sea level and physical component of soils (pH, calcium, phosphorus, potassium and percentage of organic matter) showed no effect on distribution of *Sphagnum* in the study area.

Student's signature

Thesis Advisor's signature