

**EFFECTS OF WATER TREATMENT AND ASPECT ORIENTATION ON THE SURVIVAL OF
PARMOTREMA TINCTORUM TRANSPLANTED TO ARTIFICIAL SUBSTRATES IN THAILAND**

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The lichen *Parmotrema tinctorum* has potential to be utilized in various ways. As such, increased production is essential to meeting future demand for this lichen. The objectives of this study were, therefore, to find appropriate techniques and microhabitats which would enhance the in situ biomass production of this lichen by means of transplantation to artificial substrates. The study was carried out by transplanting nine hundred and sixty thallus fragments of *Parmotrema tinctorum* at Khao Yai National Park. The transplanted thalli were fixed on nylon nets placed above the surface of the earth at an approximate inclination of 40°. These substrates faced the four cardinal directions in addition to those which were oriented horizontally. Three water treatments were applied to the transplanted thalli consisted of no extra water, evaporation from wet soil and spraying water over the thalli. Thirty two months after transplantation, thallus fragments which received moisture from evaporation of wet soil had higher proportion of survived thalli than those without extra water and those received spraying water over thalli accounting for 39%, 33% and 28% respectively. The transplanted thalli receiving evaporated water from the soil exhibited the highest survival rate for those on substrates facing the east at 23%, whereas those facing the south, the west, oriented horizontally, and the north exhibited respective survival rates at 19%, 21%, 19% and 18%. The thalli facing the east received more light than those facing the other cardinal directions and those oriented horizontally. The cool season showed the lowest death rate for thalli in contrast to the rainy season which showed the highest death rate caused by the accumulation of water in the nylon net substrates. In the second year of transplantation, a higher proportion of dead thalli were found comparing to the first year because numerous isidia produced by the transplanted thalli had been broken off by heavy rain. Some of them germinated and became juvenile lobules located near the original transplanted thalli. These observations are underway to facilitate optimal conditions for propagating lichens such that conservation and sustainable utilization could be implemented.