

## Analysis of factors on the asymbiotic germination of white lady's slipper orchid(*Cypripedium macranthos* Sw. *albiflorum*)

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### 멸종위기 흰복주머니란 종자발아에 미치는 요인 분석

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Cypripediums, popularly called lady's slippers or moccasin flowers, are the showiest and most sought after hardy terrestrial orchids, collected and grown by orchid and alpine plant enthusiasts alike. In Korea, 4 species of cypripedium are reported as *Cypripedium japonicum*, *C. macranthos*, *C. guttatum*, and *C. calceolus*. We had already reported the feasibilities of *C. macranthos* and *C. guttatum* with in vitro germination methods from immature seeds. The seeds of white lady's slipper orchid (*Cypripedium macranthos* Sw. *alba*) were collected 65 days after pollination in 2018. The green pods were sterilized with flame and sowed immediately on the POM(Phytomax orchid maintenance media□, Sigma) supplemented with BAP 0, 0.5, 1.0 mg/L and NAA 0, 1, 2mg/L. The germination of seed was observed 90 days after sowing, and the plantlets were subcultured to the same media according to the size of the protocorm with 1~2, 2~3, 3~4, 5~6, 7~8mm. The time of the subculture to the new media seems to be critical factors of forming rhizoids which is the hairy root of the cypripediums. As a results, the protorms of the white lady's slipper orchid was successfully germinated in the POM media supplemented BAP 0.5 and NAA 1.0 mg/L. The roots and rhizoids were formed in 5~6mm protocorms subculture over 95% survival ratio. We also tried to subculture to liquid medium without activated charcoal, however the browning or malformation of the roots was observed in the root. The formation of shoots from the protocorm was effectively enhanced in the POM media with non-additives of plant growth regulators. These results indicate the possibility of high and stable production and practical industrialization of endangered white lady's slipper orchids.

Key Words : lady's slipper orchid, *C. macranthos* SW *alba*, liquid media

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