



Comparison study of the physiology and simple phenolic content in cultivated and wild plants of *Paeonia lactiflora* pall.

Oyungerel Shagjjav^a, Usukhjargal Dalaikhuu^b, Byamba-Yondon Gurbazar^b, Batzaya Gachmaa^b Lyankhua Bayasgalankhuu^a

^aBiology department, School of Arts and Sciences, National University of Mongolia & ^bMongolian Academy of Science, 210646, Ulaanbaatar, Mongolia

Corresponding Author's email: oyungerel@num.edu.mn, Mobile no 976-99188521

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1 ABSTRACT

Paeonia lactiflora Pall. is included in the List of Very Rare Plants and Mongolian Red Book as very rare. The aim of research is to conduct a comparison study of water relation, chlorophyll fluorescence and the simple phenolic content in wild and cultivated plants of *P.lactiflora*. The water deficit was lower and water potential was higher in the cultivated (-0.577 ± 0.23 MPa) plant than in the wild plant (-1.403 ± 0.41 MPa). The optimal quantum yield (QY) and ratio fluorescence decrease (Rfd) were higher (1.4-2.1 times) in the cultivated plant than in the wild plant. In addition, the chlorophyll index is higher in the cultivated plant (54.5 ± 7.2) than in the wild plant (46.3 ± 2.53). Our result showed that physiological process of cultivated plant is more active than the wild plant and the simple phenolic content was about 1 time higher in the leaves, stem, tuber of cultivated than in the wild plant. Eventually, it could be the optimal solution for conserving the natural wild plants from becoming extinct.
