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EXPOSURE OF TWO ECOLOGICALLY CONTRASTED MOSS SPECIES TO STRATOSPHERIC
CONDITIONS: STRESS TOLERANCE AS A KEY TO SURVIVAL

Abstract

Two moss species representing the two categories of the ecological strategies typical for bryophytes (Stress tolerator and ruderal) were applied for the first assessment of their ability to sustain conditions of the stratosphere. Samples of mosses were attached to the balloons and lifted to stratosphere both in the daytime and night. Morphological changes, chloroplast condition and chlorophyll autofluorescence after the introduction of the samples to the stratosphere were observed to assess their survival abilities. *Orthotrichum anomalum*, a stress-tolerator moss was found to be much more resilient under both tested conditions than a ruderal *Physcomitrella patens*. For further assessment of survival abilities of plants under space- or Mars-like conditions, desiccation tolerant stress-tolerator species are hence hereby recommended.