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SP11_014_PA: SOIL WATERING RETAINS THALLUS WATER CONTENT AND PROLONG ACTIVE PERIOD OF LICHEN *Parmotrema tinctorum* ON TRANSPLANTED FRAMES

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Abstract:

Lichens uptake atmospheric water to drive the photosynthesis processes. Maintaining the thallus water content (TWC) can increase the lichens growth. The objective of this study was to examine the effect of different soil watering regimes on TWC and photosynthetic efficiency of *P. tinctorum* on the transportation frame. Four treatments of water regimes included one-time watering at 7 A.M. with 10 liters (W10), 20 liters (W20), and 30 liters (W30), and constant watering of 10 liters at every 30 minutes from 7 to 10 A.M. The frames with unwatering (Wc) was the control condition. Relative Humidity (RH) inside the frames, TWC, and chlorophyll fluorescence (Fv/Fm) were measured between 5 a.m. to 8 p.m. for 3 days. Our results show that lichens entered a dry period starting at 9.30 to 10.00 a.m. The W₇₀ treatment yielded the highest RH, TWC and Fv/Fm at 88.9%, 12% and 0.19 respectively, while W₃₀ were subordinately. The values from the W₁₀ and W₂₀ did not differ from those of Wc. These results indicated that constant watering provided enough water to increase RH inside the frames and TWC, while the W₁₀ and W₂₀ treatment could not provide enough water. The extension of watering until the dry period may result in faster growth of transplanted lichens. However, this study needs a longer time to follow up on the experiments to observe the higher growth of transplanted lichens.