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Tema - Botânica: diversidade de cores e formas

Water relations, gas exchange and photosynthetic pigment in leaves of *Pitcairnia lanuginosa* Ruiz & Pav., (Bromeliaceae)

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Poikilohidric plants may desiccate due to low humidity of atmospheric air, experiencing severe protoplasmic dehydration, recovering the metabolism after rehydration. In this study we evaluate the water relations, gas exchange and photosynthetic pigment contents after desiccation of *Pitcairnia lanuginosa*. The imposition of water deficit was held in plants by complete suspension of irrigation. The control group was watered daily. The measurements were performed until 60 days of drought and the 24, 48 and 72 hours after rehydration. *P. lanuginosa* showed tolerance to desiccation. RWC and leaf water potential decreased from day 10 on, reaching 44.90% and -4.4 Mpa, respectively at 60 days of stress induction, restoring values close to control after rehydration. The rate of net photosynthesis and transpiration decreased rapidly in plants submitted to water suppression, with decrease in the assimilation (-0.522 µmol $m^{-2}s^{-1}$ at 60 days of drought). With rehydration, photosynthesis and transpiration resumed gradually reaching levels equivalent to control. A decrease in chlorophyll content was observed after 50 days under dehydration. Carotenoid content increased after 10 days with a sequent fall until 60 days, indicating a protective mechanism of the photosynthetic apparatus. Our findings indicate that plants subjected to desiccation have a delay in foliar dehydration when compared to the loss of soil moisture. This mechanism seems to be more evident in advanced stages of water deficit, indicating the presence of high protection capacity and metabolic restructuring after rehydration.

Key words: water deficit, chlorophyll *a*, desiccation tolerance, rehydration.

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