

Contrasting thermal acclimation of leaf dark respiration and photosynthesis of Antarctic vascular plant species exposed to nocturnal warming

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Leaf respiration and photosynthesis will respond differently to an increase in temperature during night, which can be more relevant in sensitive ecosystems such as Antarctica. We postulate that the plant species able to colonize the Antarctic Peninsula ? *Colobanthus quitensis* (Kunth) Bartl. and *Deschampsia antarctica* Desv. ? are able to acclimate their foliar respiration and to maintain photosynthesis under nocturnal warming to sustain a positive foliar carbon balance. We conducted a laboratory experiment to evaluate the effect of time of day (day and night) and nocturnal warming on dark respiration. Short (E0 and Q10) and long-term acclimation of respiration, leaf carbohydrates, photosynthesis (Asat) and foliar carbon balance (R/A) were evaluated. The results suggest that the two species have differential thermal acclimation respiration, where *D. antarctica* showed more thermosensitivity to short-term changes in temperature than *C. quitensis*.