

# Physiological and molecular responses of *Prosopis chilensis* under field and simulation conditions

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The diurnal courses of CO<sub>2</sub> assimilation and stomatal conductance in spring were determined in trees of *Prosopis chilensis* growing in Quebrada San Carlos, Vicuña, 4th Region, Chile. These two parameters along with proline content, and the expression of free and conjugated ubiquitin and the heat shock protein (HSP) Mr 70 K were determined at the same time intervals in the leaves of six-month-old plants acclimated in a growth chamber with similar conditions to those of Quebrada San Carlos. The expression of the HSPs was studied by Western and immuno dot blot analyses using monoclonal and polyclonal antibodies generated against these types of proteins. The CO<sub>2</sub> assimilation of northwest-facing trees and plants under simulated conditions showed a bimodal response with maxima at 12.00 and 18.00 hr, when the temperature was 25° and the relative humidities were 35 and 33%, respectively; the minimum was around 15.00 hr with a temperature of 35° and a relative humidity of 32%. The low CO<sub>2</sub> assimil