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**50 PHOTOSYNTHETIC PERFORMANCE OF
DECIDUOUS SOUTH AMERICAN
NOTHOFAGUS BLUME SPECIES
(Actividad fotosintética de especies
caducifolias sudamericanas de Nothofagus
Blume).**

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The temperate forest in southern South America lies on both sides of Andes Mountains covering a broad latitudinal range (33°-55° S). The genus *Nothofagus* with evergreen and deciduous species, is the most important component of this ecosystem. The light responses of the deciduous *Nothofagus* species (*N. antarctica*, *N. alpina*, *N. obliqua*) were investigated with a PAM modulated chlorophyll fluorescence system. Electron transport rate for photosystem II were calculated from light response curves and under ambient light conditions. Net photosynthesis, transpiration and leaf conductance of fully expanded leaves were measured with an open minicuvette system at light saturation. The highest electron transport rates of sun-exposed leaves were found in *N. antarctica* with 135.7 – 187.4 $\mu\text{mol m}^{-2} \text{s}^{-1}$, while in *N. alpina* 73.2 – 81.3 $\mu\text{mol m}^{-2} \text{s}^{-1}$ and *N. obliqua* 86.2 – 103.7 $\mu\text{mol m}^{-2} \text{s}^{-1}$. The photosynthetic performance of the three investigated species correspond with their ecological behaviour and with their habitat conditions: *N. alpina* and *N. obliqua* are shade tolerant species that growing in depth and good drainage soils, while *N. antarctica* prefers extreme habitats in open areas with stony or organic soil and with cold, flooding or dry conditions.

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