SPAD values obtained with the portable chlorophyll-meter (Clorofilio, Cavadevices®) were contrasted with chlorophyll concentration assessed by extraction. One-hundred and five leaves of shoots corresponding to ten adult trees (25-35 years old) of *N. obliqua* were sampled. In these shoots, both their size and the variations in internode length and leaf size were indicative of the production of neoformed leaves (Puntieri et al. 2002; Guédon et al. 2006). Therefore, we distinguished leaves of the proximal section (n= 60) from those of the distal section of each shoot (n= 45), considering the limit between both sections as the point where clear changes in internode length and leaf size were evident. For each leaf, three measurements with the portable chlorophyll-meter were performed and then a tissue sample of known area was taken. Each sample was ground in 2 ml of Acetone/Tris buffer (80:20 vol:vol, pH 7.8; Sims and Gamon 2002), and centrifuged to remove particles; the supernatant was diluted to a final volume of 6 ml with additional Acetone/Tris buffer. The absorbance of the extract was measured with a spectrometer (Hewlett-Packard 8453) at wavelengths of 663 and 647 nm so as to assess the concentration of chlorophylls *a* and *b*, respectively. Total chlorophyll content was calculated as the sum of chl *a* and chl *b* as described by Sims and Gamon (2002).

A function for the estimation of the chlorophyll was obtained by applying a mixed effects model (GLMM) in which the chlorophyll content by extraction (Y) was related to the SPAD value per leaf, leaf position (proximal or distal) and the SPAD*leaf position interaction, as a fixed factors and individual as a random factor. Such analysis showed a significant relationship of SPAD value (F= 141.5, *p*< 0.001), leaf position (F= 32.5, *p*< 0.001) and the interaction of both variables (F= 4.3, *p*< 0.05) with leaf chlorophyll content (Fig S3).

![Graph showing total chlorophyll content as function of SPAD values and leaf type (proximal vs. distal).](image-url)

**Online resource S3** total chlorophyll content as function of SPAD values and leaf type (proximal vs. distal).
Morpho-physiological responses of *Nothofagus obliqua* to light intensity and water status, with focus on primary growth dynamics

Trees- Structure and Function

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