**Supplementary Information**

**Full reference list of the studies cited in supplementary Excel file for both relative growth rate (RGR), net CO2 assimilation (*A*N) and optimum temperature (*T*opt)**

**Abbas T, Balal RM, Shahid MA, *et al*.** 2015. Silicon-induced alleviation of NaCl toxicity in okra (*Abelmoschus esculentus*) is associated with enhanced photosynthesis, osmoprotectants and antioxidant metabolism. Acta Physiologiae Plantarum 37, 6.

**Adachi S, Nakae T, Uchida M, *et al*.** 2013. The mesophyll anatomy enhancing CO2 diffusion is a key trait for improving rice photosynthesis. Journal of Experimental Botany 64, 1061-1072.

**Alpert P, Oechel WC** 1987. Carbon balance limits the microdistribution of *Grimmia laevigata*, a desiccation-tolerant plant. Ecology 66, 660-669.

**Andersen DK, Ejrnæs R, Riis T.** 2016. N-and P-addition inhibits growth of rich fen bryophytes. Journal of Bryology 38, 127-137.

**Aranjuelo I, Cabrera-Bosquet L, Morcuende R, *et al*.** 2011. Does ear C sink strength contribute to overcoming photosynthetic acclimation of wheat plants exposed to elevated CO2? Journal of Experimental Botany 62, 3957-3969.

**Aranjuelo I, Irigoyen JJ, Nogués S, Sánchez-Díaz M.** 2009. Elevated CO2 and water-availability effect on gas exchange and nodule development in N2-fixing alfalfa plants. Environmental and Experimental Botany 65, 18-26.

**Aranjuelo I, Pérez P, Hernández L, *et al*.** 2005. The response of nodulated alfalfa to water supply, temperature and elevated CO2: photosynthetic downregulation. Physiologia Plantarum 123, 348-358.

**Bates JW.** 1994. Responses of the mosses *Brachythecium rutabulum* and *Pseudoscleropodium purum* to a mineral nutrient pulse. Functional Ecology, 686-693.

**Battie‐Laclau PA, Laclau JP, Beri C, *et al*.** 2014. Photosynthetic and anatomical responses of *Eucalyptus grandis* leaves to potassium and sodium supply in a field experiment. Plant, Cell & Environment 37, 70-81.

**Bazihizina N, Colzi I, Giorni E, Mancuso S, Gonnelli C.** 2015. Photosynthesizing on metal excess: Copper differently induced changes in various photosynthetic parameters in copper tolerant and sensitive *Silene paradoxa* L. populations. Plant Science 232, 67-76.

**Bazzaz FA, Paolillo JrDJ, Jagels RH.** 1970. Photosynthesis and respiration of forest and alpine populations of *Polytrichum juniperinum*. Bryologist, 579-585.

**Bergeron O, Margolis HA, Coursolle C.** 2009. Forest floor carbon exchange of a boreal black spruce forest in eastern Canada. Biogeosciences Discussions 6, 5507-5548.

**Block W, Smith LRI, Kennedy AD.** 2009. Strategies of survival and resource exploitation in the Antarctic fellfield ecosystem. Biological Reviews 84, 449-484.

**Bongi G, Loreto F.** 1989. Gas-exchange properties of salt-stressed olive (*Olea europea* L.) leaves. Plant Physiology 90, 1408-1416.

**Brito CE, Bown HE, Fuentes JP, Franck N, Perez-Quezada JF.** 2014. Mesophyll conductance constrains photosynthesis in three common sclerophyllous species in Central Chile. Revista Chilena de Historia Natural 87, 1-2.

**Cai Y, Wang J, Li S, Zhang L, Peng L, Xie W, Liu F.** 2015. Photosynthetic response of an alpine plant, *Rhododendron delavayi* Franch, to water stress and recovery: the role of mesophyll conductance. Frontiers in Plant Science 6, 1089.

**Campbell WJ, Allen JrLH, Bowes G.** 1988. Effects of CO2 concentration on rubisco activity, amount, and photosynthesis in soybean leaves. Plant Physiology 88, 1310-1316.

**Cano FJ, Sánchez‐gómez DA, Rodríguez‐Calcerrada JE, Warren CR, Gil L, Aranda I.** 2013. Effects of drought on mesophyll conductance and photosynthetic limitations at different tree canopy layers. Plant, Cell & Environment 36, 1961-80.

**Capó-Bauçà S, Font-Carrascosa M, Ribas-Carbó M, Pavlovič A, Galmés J.** 2020. Biochemical and mesophyll diffusional limits to photosynthesis are determined by prey and root nutrient uptake in the carnivorous pitcher plant *Nepenthes×ventrata*. Annals of Botany 126, 25-37.

**Carmo-Silva E, Andralojc PJ, Scales JC, *et al*.** 2017. Phenotyping of field-grown wheat in the UK highlights contribution of light response of photosynthesis and flag leaf longevity to grain yield. Journal of Experimental Botany 68, 3473-3486.

**Carriquí M, Cabrera HM, Conesa MÀ, *et al*.** 2015. Diffusional limitations explain the lower photosynthetic capacity of ferns as compared with angiosperms in a common garden study. Plant, Cell & Environment. 2015 Mar;38(3):448-60.

**Carriquí M, Douthe C, Molins A, Flexas J.** 2019a. Leaf anatomy does not explain apparent short‐term responses of mesophyll conductance to light and CO2 in tobacco. Physiologia Plantarum 165, 604-18.

**Carriquí M, Roig‐Oliver M, Brodribb TJ, *et al*.** 2019b. Anatomical constraints to nonstomatal diffusion conductance and photosynthesis in lycophytes and bryophytes. New Phytologist 222, 1256-1270.

**Centritto M, Loreto F, Chartzoulakis K.** 2003. The use of low [CO2] to estimate diffusional and non‐diffusional limitations of photosynthetic capacity of salt‐stressed olive saplings. Plant, Cell & Environment 26, 585-94.

**Chaumont M, Osório ML, Chaves MM, *et al*.** 1997. The absence of photoinhibition during the mid-morning depression of photosynthesis in *Vitis vinifera* grown in semi-arid and temperate climates. Journal of Plant Physiology 150, 743-751.

**Cheng L, Fuchigami LH, Breen PJ.** 2000. Light absorption and partitioning in relation to nitrogen content in ‘Fuji' apple leaves. Journal of the American Society for Horticultural Science 125, 581-587.

**Collins NJ.** 1976. Growth and population dynamics of the moss *Polytrichum alpestre*. in the Maritime Antarctic. Strategies of Growth and Population Dynamics of Tundra Plants 2. Oikos 27, 389-401.

**Corcuera L, Morales F, Abadia A, Gil-Pelegrín E.** 2005a. The effect of low temperatures on the photosynthetic apparatus of *Quercus ilex* subsp. *ballota* at its lower and upper altitudinal limits in the Iberian Peninsula and during a single freezing-thawing cycle. Trees 19, 99-108.

**Corcuera L, Morales F, Abadía A, Gil-Pelegrín E.** 2005b. Seasonal changes in photosynthesis and photoprotection in a *Quercus ilex* subsp. *ballota* woodland located in its upper altitudinal extreme in the Iberian Peninsula. Tree Physiology 25, 599-608.

**Davey MC, Rothery P.** 1997. Interspecific variation in respiratory and photosynthetic parameters in Antarctic bryophytes. The New Phytologist 137, 231-240.

**De Lucia EH, Whitehead D, Clearwater MJ.** 2003. The relative limitation of photosynthesis by mesophyll conductance in co-occurring species in a temperate rainforest dominated by the conifer *Dacrydium cupressinum*. Functional Plant Biology 30, 1197-204.

**Delfine S, Alvino A, Villani MC, Loreto F.** 1999. Restrictions to carbon dioxide conductance and photosynthesis in spinach leaves recovering from salt stress. Plant Physiology 119, 1101-1106.

**Delfine S, Loreto F, Alvino A.** 2001. Drought-stress effects on physiology, growth and biomass production of rainfed and irrigated bell pepper plants in the Mediterranean region. Journal of the American Society for Horticultural Science 126, 297-304.

**Delfine S, Loreto F, Pinelli P, Tognetti R, Alvino A.** 2005. Isoprenoids content and photosynthetic limitations in rosemary and spearmint plants under water stress. Agriculture, Ecosystems & Environment, 106, 243-52.

**Dijkstra P, Lambers H.** 1989. Analysis of specific leaf area and photosynthesis of two inbred lines of *Plantago major* differing in relative growth rate. New Phytologist 113, 283-290.

**Dilks TJK, Proctor MCF.** 1975. Comparative experiments on temperature responses of bryophytes: assimilation, respiration and freezing damage. Journal of Bryology 8, 317-336.

**Du Q, Liu T, Jiao X, Song X, Zhang J, Li J.** 2019. Leaf anatomical adaptations have central roles in photosynthetic acclimation to humidity. Journal of Experimental Botany 70, 4949-4962.

**Eckardt NA, Snyder GW, Portis JrAR, Ogren WL.** 1997. Growth and photosynthesis under high and low irradiance of *Arabidopsis thaliana* antisense mutants with reduced ribulose-1, 5-bisphosphate carboxylase/oxygenase activase content. Plant Physiology 113, 575-586.

**Ecochard R, Cavalie G, Nicco C, Piquemal M, Sarrafi A.** 1991. Rubisco Content and Specific Activity in Barley (*Hordeum vulgare* L.) I. Genetic Variability. Journal of Experimental Botany 42, 39-43.

**Ellsworth PV, Ellsworth PZ, Koteyeva NK, Cousins AB.** 2018. Cell wall properties in *Oryza sativa* influence mesophyll CO2 conductance. New Phytologist 219, 66-76.

**Ennahli S, Earl HJ.** 2005. Physiological limitations to photosynthetic carbon assimilation in cotton under water stress. Crop Science 45, 2374-2382.

**Epron D, Godard D, Cornic G, Genty B.** 1995. Limitation of net CO2 assimilation rate by internal resistances to CO2 transfer in the leaves of two tree species (*Fagus sylvatica* L. and *Castanea sativa* Mill.). Plant, Cell & Environment 18, 43-51.

**Erice G, Irigoyen JJ, Pérez P, Martínez‐Carrasco R, Sánchez‐Díaz M.** 2006. Effect of elevated CO2, temperature and drought on photosynthesis of nodulated alfalfa during a cutting regrowth cycle. Physiologia Plantarum 126, 458-468.

**Erice G, Sanz-Sáez A, Urdiain A, *et al*.** 2014. Harvest index combined with impaired N availability constrains the responsiveness of durum wheat to elevated CO2 concentration and terminal water stress. Functional Plant Biology 41, 1138-1147.

**Evans JR, Caemmerer SV, Setchell BA, Hudson GS.** 1994. The relationship between CO2 transfer conductance and leaf anatomy in transgenic tobacco with a reduced content of Rubisco. Functional Plant Biology 21, 475-95.

**Evans JR.** 1983. Nitrogen and photosynthesis in the flag leaf of wheat (*Triticum aestivum* L.). Plant Physiology 72, 297-302.

**Farage PK, Blowers D, Long SP, Baker NR.** 2006. Low growth temperatures modify the efficiency of light use by photosystem II for CO2 assimilation in leaves of two chilling‐tolerant C4 species, *Cyperus longus* L. and *Miscanthus×giganteus*. Plant, Cell & Environment 29, 720-728.

**Faria T, Silvério D, Breia E, *et al*.** 1998. Differences in the response of carbon assimilation to summer stress (water deficits, high light and temperature) in four Mediterranean tree species. Physiologia Plantarum 102, 419-428.

**Fila G, Badeck FW, Meyer S, Cerovic Z, Ghashghaie J.** 2006. Relationships between leaf conductance to CO2 diffusion and photosynthesis in micropropagated grapevine plants, before and after *ex vitro* acclimatization. Journal of Experimental Botany 57 2687-2695.

**Fini A, Loreto F, Tattini M, Giordano C, Ferrini F, Brunetti C, Centritto M.** 2016. Mesophyll conductance plays a central role in leaf functioning of Oleaceae species exposed to contrasting sunlight irradiance. Physiologia Plantarum 157, 54-68.

**Flexas J, Bota J, Escalona JM, Sampol B, Medrano H.** 2002. Effects of drought on photosynthesis in grapevines under field conditions: an evaluation of stomatal and mesophyll limitations. Functional Plant Biology 29, 461-71.

**Flexas J, Diaz‐espejo AN, Galmes J, Kaldenhoff R, Medrano H, Ribas‐carbo MI.** 2007b. Rapid variations of mesophyll conductance in response to changes in CO2 concentration around leaves. Plant, Cell & Environment 30, 1284-1298.

**Flexas J, Escalona JM, Medrano H.** 1999. Water stress induces different levels of photosynthesis and electron transport rate regulation in grapevines. Plant, Cell & Environment 22, 39-48.

**Flexas J, Gulías J, Jonasson S, Medrano H, Mus M.** 2001. Seasonal patterns and control of gas exchange in local populations of the Mediterranean evergreen shrub *Pistacia lentiscus* L. Acta Oecologica 22, 33-43.

**Flexas J, Ortuño MF, Ribas‐Carbo M, Diaz‐Espejo A, Florez‐Sarasa ID, Medrano H.** 2007a. Mesophyll conductance to CO2 in *Arabidopsis thaliana*. New Phytologist 175, 501-11.

**Flexas J, Ribas‐Carbó M, Bota J, Galmés J, Henkle M, Martínez‐Cañellas S, Medrano H.** 2006b. Decreased Rubisco activity during water stress is not induced by decreased relative water content but related to conditions of low stomatal conductance and chloroplast CO2 concentration. New Phytologist. 2006 Oct;172(1):73-82.

**Flexas J, Ribas‐Carbó M, Hanson DT.** 2006a. Tobacco aquaporin NtAQP1 is involved in mesophyll conductance to CO2 *in vivo*. The Plant Journal 48, 427-39.

**Flowers MD, Fiscus EL, Burkey KO, Booker FL, Dubois JJ.** 2007. Photosynthesis, chlorophyll fluorescence, and yield of snap bean (*Phaseolus vulgaris* L.) genotypes differing in sensitivity to ozone. Environmental and Experimental Botany 61, 190-198.

**Furness SB, Grime JP.** 1982a. Growth rate and temperature responses in bryophytes: I. An investigation of *Brachythecium rutabulum*. The Journal of Ecology 70, 513-523.

**Furness SB, Grime JP.** 1982b. Growth rate and temperature responses in bryophytes: II. A comparative study of species of contrasted ecology. The Journal of Ecology 70, 525-536.

**Gaberščik A, Martinčič A.** 1987. Seasonal dynamics of net photosynthesis and productivity of *Sphagnum papillosum*. Lindbergia 13, 105-110.

**Galmés J, Abadía A, Medrano H, Flexas J.** 2007a. Photosynthesis and photoprotection responses to water stress in the wild-extinct plant *Lysimachia minoricensis*. Environmental and Experimental Botany 60, 308-317.

**Galmés J, Flexas J, Savé R, Medrano H.** 2007b. Water relations and stomatal characteristics of Mediterranean plants with different growth forms and leaf habits: responses to water stress and recovery. Plant and Soil 290, 139-155.

**Galmés J, Medrano H, Flexas J.** 2007c. Photosynthetic limitations in response to water stress and recovery in Mediterranean plants with different growth forms. New phytologist. 2007 Jul;175(1):81-93.

**Galmés J, Perdomo JA, Flexas J, Whitney SM.** 2013. Photosynthetic characterization of Rubisco transplantomic lines reveals alterations on photochemistry and mesophyll conductance. Photosynthesis Research 115, 153-166.

**Garcia-Plazaola JI, Faria T, Abadia J, Chaves MM, Pereira JS.** 1997. Seasonal changes in xanthophyll composition and photosynthesis of cork oak (*Quercus suber* L.) leaves under Mediterranean climate. Journal of Experimental Botany 48, 1667-1674.

**Gimenez C, Mitchell VJ, Lawlor DW.** 1992. Regulation of photosynthetic rate of two sunflower hybrids under water stress. Plant Physiology 98, 516-524.

**Giuliani R, Koteyeva N, Voznesenskaya E, Evans MA, Cousins AB, Edwards GE.** 2013. Coordination of leaf photosynthesis, transpiration, and structural traits in rice and wild relatives (genus *Oryza*). Plant Physiology 162, 1632-1651.

**Gong HY, Li Y, Fang G, Hu DH, Jin WB, Wang ZH, Li YS.** 2015. Transgenic rice expressing Ictb and FBP/Sbpase derived from cyanobacteria exhibits enhanced photosynthesis and mesophyll conductance to CO2. PLoS One 10, e0140928.

**Goulden ML, Crill PM.** 1997. Automated measurements of CO2 exchange at the moss surface of a black spruce forest. Tree physiology 17, 537-542.

**Grace J, Marks TC.** 1978. Physiological aspects of bog production at Moor House. In: Heal OW, Perkins DF, eds. Production ecology of British moors and montane grasslands. Springer, Berlin, Heidelberg, 38-51.

**Graham LE, Kim E, Arancibia‐Avila P, *et al*.** 2010. Evolutionary and ecophysiological significance of sugar utilization by the peat moss *Sphagnum compactum* (Sphagnaceae) and the common charophycean associates *Cylindrocystis brebissonii* and *Mougeotia* sp. (Zygnemataceae). American Journal of Botany 97, 1485-1491.

**Green TGA, Schroeter B, Kappen L, *et al*.** 1998. An assessment of the relationship between chlorophyll a fluorescence and CO2 gas exchange from field measurements on a moss and lichen. Planta 206, 611-618.

**Green TGA, Schroeter B, Seppelt RD.** 2000. Effect of temperature, light and ambient UV on the photosynthesis of the moss *Bryum argenteum* Hedw., in continental Antarctica. In: Davidson W, Howard-Williams C, Broady P, eds. Antarctic Ecosystems: Models for Wider Ecological Understanding. Christchurch: The Caxton Press, 165-170.

**Grime JP, Rincon ER, Wickerson BE.** 1990. Bryophytes and plant strategy theory. Botanical Journal of the Linnean society 104, 175-186.

**Grotkopp E, Rejmánek M.** 2007. High seedling relative growth rate and specific leaf area are traits of invasive species: phylogenetically independent contrasts of woody angiosperms. American Journal of Botany 94, 526-532.

**Gulías J, Flexas J, Abadía A, Madrano H.** 2002. Photosynthetic responses to water deficit in six Mediterranean sclerophyll species: possible factors explaining the declining distribution of *Rhamnus ludovici-salvatoris*, an endemic Balearic species. Tree Physiology 22, 687-697.

**Guo J, Trotter CM, Newton PC.** 2006. Initial observations of increased requirements for light-energy dissipation in ryegrass (*Lolium perenne*) when source/sink ratios become high at a naturally grazed free air CO2 enrichment (FACE) site. Functional Plant Biology 33, 1045-1053.

**Haldimann P, Gallé A, Feller U.** 2008. Impact of an exceptionally hot dry summer on photosynthetic traits in oak (*Quercus pubescens*) leaves. Tree Physiology 28, 785-795.

**Han J, Lei Z, Flexas J, Zhang Y, Carriquí M, Zhang W, Zhang Y.** 2018. Mesophyll conductance in cotton bracts: anatomically determined internal CO2 diffusion constraints on photosynthesis. Journal of Experimental Botany 69, 5433-5443.

**Han JM, Meng HF, Wang SY, Jiang CD, Liu F, Zhang WF, Zhang YL.** 2016. Variability of mesophyll conductance and its relationship with water use efficiency in cotton leaves under drought pretreatment. Journal of Plant Physiology, 194, 61-71.

**Hanba YT, Kogami H, Terashima I.** 2002. The effect of growth irradiance on leaf anatomy and photosynthesis in Acer species differing in light demand. Plant, Cell & Environment 25, 1021-1030.

**Hanba YT, Miyazawa SI, Terashima I.** 1999. The influence of leaf thickness on the CO2 transfer conductance and leaf stable carbon isotope ratio for some evergreen tree species in Japanese warm‐temperate forests. Functional Ecology 13, 632-639.

**Harder R.** 1925. Ûber die Assimilation von Kälte- und Wärmeindividuen dergleichen Pflanzenspenspecies. Jb wiss Bot 64, 169–200.

**Herbinger K, Then C, Haberer K, *et al*.** 2007. Gas exchange and antioxidative compounds in young beech trees under free-air ozone exposure and comparisons to adult trees. Plant Biology 9, 288-297.

**Herzog B, Hoffmann S, Hartung W, Lüttge U.** 1999. Comparison of photosynthetic responses of the sympatric tropical C3 species *Clusia multiflora* HBK and the C3-CAM intermediate species Clusia minor L. to irradiance and drought stress in a phytotron. Plant Biology 1, 460-470.

**Hicklenton PR, Oechel WC.** 1976. Physiological aspects of the ecology of *Dicranum fuscescens* in the subarctic. I. Acclimation and acclimation potential of CO2 exchange in relation to habitat, light, and temperature. Canadian Journal of Botany 54, 1104-1119.

**Hommel R, Siegwolf R, Saurer M, Farquhar GD, Kayler Z, Ferrio JP, Gessler A.** 2014. Drought response of mesophyll conductance in forest understory species–impacts on water‐use efficiency and interactions with leaf water movement. Physiologia Plantarum 152, 98-114.

**Hu W, Lu Z, Meng F, Li X, Cong R, Ren T, Sharkey TD, Lu J.** 2020. The reduction in leaf area precedes that in photosynthesis under potassium deficiency: the importance of leaf anatomy. New Phytologist 227, 1749-1763.

**Hussin S, Geissler N, El-Far MM, Koyro HW.** 2017. Effects of salinity and short-term elevated atmospheric CO2 on the chemical equilibrium between CO2 fixation and photosynthetic electron transport of *Stevia rebaudiana* Bertoni. Plant Physiology and Biochemistry 118, 178-186.

**Iacono FR, Bertamini MA, Scienza A, Coombe BG.** 1995. Differential effects of canopy manipulation and shading of *Vitis vinifera* L. cv. Cabernet Sauvignon. Leaf gas exchange, photosynthetic electron transport rate and sugar accumulation in berries. Vitis 34, 201-206.

**Ino Y.** 1990. Comparison of net photosynthesis and dark respiration of Antarctic mosses measured in the Antarctic and in Japan. In Proc. NIPR Symp. Polar Biol 3, 245-253.

**Izuta T, Yamaoka T, Nakaji T, *et al*.** 2004. Growth, net photosynthesis and leaf nutrient status of *Fagus crenata* seedlings grown in brown forest soil acidified with H2SO4 or HNO3 solution. Trees 18, 677-685.

**Jauregui I, Aparicio-Tejo PM, Avila C, *et al*.** 2015. Root and shoot performance of *Arabidopsis thaliana* exposed to elevated CO2: a physiologic, metabolic and transcriptomic response. Journal of Plant Physiology 189, 65-76.

**Jauregui I, Aparicio‐Tejo PM, Avila C, *et al*.** 2016. Root–shoot interactions explain the reduction of leaf mineral content in *Arabidopsis* plants grown under elevated [CO2] conditions. Physiologia Plantarum 158, 65-79.

**Juszczuk IM, Flexas J, Szal B, Dąbrowska Z, Ribas‐Carbo M, Rychter AM.** 2007. Effect of mitochondrial genome rearrangement on respiratory activity, photosynthesis, photorespiration and energy status of MSC16 cucumber (*Cucumis sativus*) mutant. Physiologia Plantarum 131, 527-541.

**Kallio P, Kärenlampi L.** 1975. Photosynthesis in mosses and lichens. In: Cooper JP, ed. Photosynthesis and productivity in different environments. Cambridge: Cambridge University Press, 393-423.

**Kappen L, Smith RL, Meyer M.** 1989. Carbon dioxide exchange of two ecodemes of *Schistidium antarctici* in continental Antarctica. Polar Biology 9, 415-422.

**Katahata S, Naramoto M, Kakubari Y, Mukai Y.** 2005. Photosynthetic acclimation to dynamic changes in environmental conditions associated with deciduous overstory phenology in *Daphniphyllum humile*, an evergreen understory shrub. Tree physiology 25, 437-445.

**Kitao M, Lei TT, Koike T, Tobita H, Maruyama Y.** 2003. Higher electron transport rate observed at low intercellular CO2 concentration in long‐term drought‐acclimated leaves of Japanese mountain birch (*Betula ermanii*). Physiologia Plantarum 118, 406-413.

**Kitao M, Lei TT.** 2007. Circumvention of over-excitation of PSII by maintaining electron transport rate in leaves of four cotton genotypes developed under long-term drought. Plant Biology 9, 69-76.

**Kitao M, Yoneda R, Tobita H, *et al*.** 2004. Photosynthetic properties and susceptibility to photoinhibition in seedlings of six tropical fruit tree species native to Malaysia. Rehabilitation of Degraded Tropical Forest, Southeast Asia, 99-107.

**Kogami H, Hanba YT, Kibe T, Terashima I, Masuzawa T**. 2001. CO2 transfer conductance, leaf structure and carbon isotope composition of *Polygonum cuspidatum* leaves from low and high altitudes. Plant, Cell & Environment 24, 529-538.

**Krall JP, Edwards GE.** 1992. Relationship between photosynthem II activity and CO2 fixation in leaves. Physiologia Plantarum 86, 180-187.

**Krause GH, Jahns P, Virgo A, *et al*.** 2007. Photoprotection, photosynthesis and growth of tropical tree seedlings under near-ambient and strongly reduced solar ultraviolet-B radiation. Journal of Plant Physiology 164, 1311-1322.

**Kronfuß G, Polle A, Tausz M, Havranek WM, Wieser G.** 1998. Effects of ozone and mild drought stress on gas exchange, antioxidants and chloroplast pigments in current-year needles of young Norway spruce [*Picea abies* (L.) Karst.]. Trees 12, 482-489.

**Lal A, Ku MS, Edwards GE.** 1996. Analysis of inhibition of photosynthesis due to water stress in the C3 species Hordeum vulgare and *Vicia faba*: electron transport, CO2 fixation and carboxylation capacity. Photosynthesis Research 49, 57-69.

**Lawlor DW, Kontturi M, Young AT.** 1989. Photosynthesis by flag leaves of wheat in relation to protein, ribulose bis phosphate carboxylase activity and nitrogen supply. Journal of Experimental Botany 40, 43-52.

**Leverenz JW, Öquist G, Wingsle G.** 1992. Photosynthesis and photoinhibition in leaves of chlorophyll b‐less barley in relation to absorbed light. Physiologia Plantarum 85, 495-502.

**Lichtenthaler HK, Ač A, Marek MV, Kalina J, Urban O.** 2007. Differences in pigment composition, photosynthetic rates and chlorophyll fluorescence images of sun and shade leaves of four tree species. Plant Physiology and Biochemistry 45, 577-588.

**LLoyd J., Syvertsen J.P., Kriedemann P.E. & Farquhar G.D.** 1992. Low conductances for CO2 diffusion from stomata to the sites of carboxylation in leaves of woody species. Plant, Cell and Environment 15, 873-899.

**Loik ME, Holl KD.** 2001. Photosynthetic responses of tree seedlings in grass and under shrubs in early-successional tropical old fields, Costa Rica. Oecologia 127, 40-50.

**Longton RE.** 1974. Microclimate and biomass in communities of the *Bryum* association on Ross Island, continental Antarctica. Bryologist, 109-127.

**Longton RE.** 1988. Adaptations and strategies of polar bryophytes. Botanical journal of the Linnean Society 98, 253-268.

**Loreto F, Harley PC, Di Marco G, Sharkey TD.** 1992. Estimation of mesophyll conductance to CO2 flux by three different methods. Plant Physiology 98, 1437-1443.

**Lösch R, Mülders P, Fischer E, Frahm JP.** 1994. Scientific results of the BRYOTROP expedition to Zaire and Rwanda. 3. Photosynthetic gas exchange of bryophytes from different forest types in eastern Central Africa. Tropical Bryology 9, 169-185.

**Lu Q, Lu C, Zhang J, Kuang T.** 2002. Photosynthesis and chlorophyll a fluorescence during flag leaf senescence of field-grown wheat plants. Journal of Plant Physiology 159, 1173-1178.

**Lu Z, Lu J, Pan Y, Lu P, Li X, Cong R, Ren T.** 2016a. Anatomical variation of mesophyll conductance under potassium deficiency has a vital role in determining leaf photosynthesis. Plant, Cell & Environment 39, 2428-2439.

**Lu Z, Ren T, Pan Y, Li X, Cong R, Lu J.** 2016b. Differences on photosynthetic limitations between leaf margins and leaf centers under potassium deficiency for *Brassica napus* L. Scientific Reports 6, 1-3.

**Makino A, Sakuma H, Sudo E, Mae T.** 2003. Differences between maize and rice in N-use efficiency for photosynthesis and protein allocation. Plant and Cell Physiology 44, 952-956.

**Marchi S, Tognetti R, Minnocci A, Borghi M, Sebastiani L.** 2008. Variation in mesophyll anatomy and photosynthetic capacity during leaf development in a deciduous mesophyte fruit tree (*Prunus persica*) and an evergreen sclerophyllous Mediterranean shrub (*Olea europaea*). Trees, 22, 559-571.

**Mateos-Naranjo E, Gallé A, *et al*.** 2015. Assessment of the role of silicon in the Cu-tolerance of the C4 grass *Spartina densiflora*. Journal of Plant Physiology 178, 74-83.

**McKenna MF, Shipley B.** 1999. Interacting determinants of interspecific relative growth: empirical patterns and a theoretical explanation. Ecoscience 6, 286-296.

**Medeiros DB, Martins SC, Cavalcanti JH, *et al*.** 2016. Enhanced photosynthesis and growth in atquac1 knockout mutants are due to altered organic acid accumulation and an increase in both stomatal and mesophyll conductance. Plant Physiology 170, 86-101.

**Meyer, M., Seibt, U. and Griffiths, H.** 2008. To concentrate or ventilate? Carbon acquisition, isotope discrimination and physiological ecology of early land plant life forms. Philosophical Transactions of the Royal Society B: Biological Sciences 363, 2767-2778.

**Miyazawa SI, Yoshimura S, Shinzaki Y, Maeshima M, Miyake C.** 2008. Deactivation of aquaporins decreases internal conductance to CO2 diffusion in tobacco leaves grown under long-term drought. Functional Plant Biology 35, 553-564.

**Mizokami Y, Noguchi KO, Kojima M, Sakakibara H, Terashima I.** 2015. Mesophyll conductance decreases in the wild type but not in an ABA‐deficient mutant (aba1) of *Nicotiana plumbaginifolia* under drought conditions. Plant, Cell & Environment 38, 388-98.

**Muir CD, Hangarter RP, Moyle LC, Davis PA.** 2014. Morphological and anatomical determinants of mesophyll conductance in wild relatives of tomato (*Solanum* sect. l*ycopersicon*, sect. Lycopersicoides; Solanaceae). Plant, Cell & Environment 37, 1415-26.

**Muller O, Oguchi R, Hirose T, Werger MJ, Hikosaka K.** 2009. The leaf anatomy of a broad‐leaved evergreen allows an increase in leaf nitrogen content in winter. Physiologia Plantarum 136, 299-309.

**Murchie EH, Chen YZ, Hubbart S, Peng S, Horton P.** 1999. Interactions between senescence and leaf orientation determine in situ patterns of photosynthesis and photoinhibition in field-grown rice. Plant Physiology 119, 553-564.

**Murchie EH, Horton P.** 1998. Contrasting patterns of photosynthetic acclimation to the light environment are dependent on the differential expression of the responses to altered irradiance and spectral quality. Plant, Cell & Environment 21, 139-148.

**Nadal M, Flexas J, Gulias J.** 2018. Possible link between photosynthesis and leaf modulus of elasticity among vascular plants: a new player in leaf traits relationships? Ecology letters 21, 1372-1379.

**Nakaji T, Fukami M, Dokiya Y, Izuta T.** 2001. Effects of high nitrogen load on growth, photosynthesis and nutrient status of *Cryptomeria japonica* and *Pinus densiflora* seedlings. Trees 15, 453-461.

**Newsham KK.** 2010. The biology and ecology of the liverwort *Cephaloziella varians* in Antarctica. Antarctic Science 22, 131-143.

**Niinemets ÜL, Cescatti A, Rodeghiero M, Tosens T.** 2005. Leaf internal diffusion conductance limits photosynthesis more strongly in older leaves of Mediterranean evergreen broad‐leaved species. Plant, Cell & Environment 28, 1552-1566.

**Oberhuber W, Bauer H.** 1991. Photoinhibition of photosynthesis under natural conditions in ivy (*Hedera helix* L.) growing in an understory of deciduous trees. Planta 185:545‒553.

**Oechel WC, Collins NJ.** 1976. Comparative CO2 exchange patterns in mosses from two tundra habitats at Barrow, Alaska. Canadian Journal of Botany 54, 1355-1369.

**Oechel WC, Van Cleve K.** 1986. The role of bryophytes in nutrient cycling in the taiga. In: Van Cleve K, Chapin IIIFS, Flanagan PW, Viereck LA, eds. Forest ecosystems in the Alaskan taiga. New York: Springer, 121-137.

**Oechel WC.** 1976. Seasonal patterns of temperature response of CO2 flux and acclimation in arctic mosses growing in situ. Photosynthetica 10, 447-456.

**Oguchi R, Hikosaka K, Hirose T.** 2003. Does the photosynthetic light‐acclimation need change in leaf anatomy? Plant, Cell & Environment 26, 505-12.

**Oguchi R, Hikosaka K, Hirose T.** 2005. Leaf anatomy as a constraint for photosynthetic acclimation: differential responses in leaf anatomy to increasing growth irradiance among three deciduous trees. Plant, Cell & Environment 28, 916-27.

**Oguchi R, Hikosaka K, Hiura T, Hirose T.** 2006. Leaf anatomy and light acclimation in woody seedlings after gap formation in a cool-temperate deciduous forest. Oecologia 149, 571.

**Ouyang W, Struik PC, Yin X, Yang J.** 2017. Stomatal conductance, mesophyll conductance, and transpiration efficiency in relation to leaf anatomy in rice and wheat genotypes under drought. Journal of Experimental Botany 68, 5191-51205.

**Pannewitz S, Green TA, Maysek K, *et al*.** 2005. Photosynthetic responses of three common mosses from continental Antarctica. Antarctic science 17, 341-352.

**Parida AK, Das AB, Mohanty P.** 2004. Defense potentials to NaCl in a mangrove, *Bruguiera parviflora*: differential changes of isoforms of some antioxidative enzymes. Journal of Plant Physiology 161, 531-542.

**Peguero-Pina JJ, Sancho-Knapik D, Martín P, *et al*.** 2015. Evidence of vulnerability segmentation in a deciduous Mediterranean oak (*Quercus subpyrenaica* EH del Villar). Trees 29, 1917-1927.

**Peguero-Pina JJ, Sancho-Knapik D, Morales F, Flexas J, Gil-Pelegrín E.** 2009. Differential photosynthetic performance and photoprotection mechanisms of three Mediterranean evergreen oaks under severe drought stress. Functional Plant Biology 36, 453-462.

**Peguero-Pina JJ, Sisó S, Fernández-Marín B, *et al*.** 2016a. Leaf functional plasticity decreases the water consumption without further consequences for carbon uptake in *Quercus coccifera* L. under Mediterranean conditions. Tree Physiology 36, 356-367.

**Peguero‐Pina JJ, Sisó S, Flexas J, *et al*.** 2017a. Cell‐level anatomical characteristics explain high mesophyll conductance and photosynthetic capacity in sclerophyllous Mediterranean oaks. New Phytologist 214, 585-596.

**Peguero-Pina JJ, Sisó S, Flexas J, *et al*.** 2017b. Coordinated modifications in mesophyll conductance, photosynthetic potentials and leaf nitrogen contribute to explain the large variation in foliage net assimilation rates across *Quercus ilex* provenances. Tree physiology 37, 1084-1094.

**Peguero-Pina JJ, Sisó S, Sancho-Knapik D, *et al*.** 2016b. Leaf morphological and physiological adaptations of a deciduous oak (*Quercus faginea* Lam.) to the Mediterranean climate: a comparison with a closely related temperate species (*Quercus robur* L.). Tree Physiology 36, 287-299.

**Pellegrini E, Francini A, Lorenzini G, Nali C.** 2011. PSII photochemistry and carboxylation efficiency in *Liriodendron tulipifera* under ozone exposure. Environmental and Experimental Botany 70, 217-226.

**Perera-Castro AV, Flexas J, González-Rodríguez ÁM, Fernández-Marín B.** 2021. Photosynthesis on the edge: photoinhibition, desiccation and freezing tolerance of Antarctic bryophytes. Photosynthesis Research 149, 135-153.

**Perera-Castro AV, Nadal M, Flexas J.** 2020b. What drives photosynthesis during desiccation? Mosses and other outliers from the photosynthesis–elasticity trade-off. Journal of Experimental Botany 71, 6460-6470.

**Perera-Castro AV, Waterman MJ, Turnbull JD, *et al*.** 2020a. It is hot in the sun: Antarctic mosses have high temperature optima for photosynthesis despite cold climate. Frontiers in Plant Science 11, 1178.

**Piel C, Frak E, Le Roux X, Genty B.** 2002. Effect of local irradiance on CO2 transfer conductance of mesophyll in walnut. Journal of Experimental Botany 53, 2423-2430.

**Pompelli MF, Martins SC, Antunes WC, Chaves AR, DaMatta FM.** 2010. Photosynthesis and photoprotection in coffee leaves is affected by nitrogen and light availabilities in winter conditions. Journal of Plant Physiology 167, 1052-1060.

**Pons TL.** 2012. Interaction of temperature and irradiance effects on photosynthetic acclimation in two accessions of *Arabidopsis thaliana*. Photosynthesis Research 113, 207-219.

**Poór P, Borbély P, Czékus Z, *et al*.** 2019. Comparison of changes in water status and photosynthetic parameters in wild type and abscisic acid-deficient sitiens mutant of tomato (*Solanum lycopersicum* cv. Rheinlands Ruhm) exposed to sublethal and lethal salt stress. Journal of Plant Physiology 232, 130-140.

**Poorter H, Van der Werf A.** 1998. Is inherent variation in RGR determined by LAR at low irradiance and by NAR at high irradiance? A review of herbaceous species. In: Lambers H, Poorter H, Van Vuuren MMI, eds. Inherent variation in plant growth. Physiological mechanisms and ecological consequences. Leiden: Backhuys Publishers, 309-336.

**Pörs Y, Hansen UT, Hoffmann P.** 2001. Compensation of differences in light absorption at the levels of photosynthetic primary processes, CO2 uptake and growth of tobacco plants. Journal of Plant Physiology 158, 1555-1564.

**Priault P, Fresneau C, Noctor G, De Paepe R, Cornic G, Streb P.** 2006a. The mitochondrial CMSII mutation of *Nicotiana sylvestris* impairs adjustment of photosynthetic carbon assimilation to higher growth irradiance. Journal of Experimental Botany 57, 2075-2085.

**Priault P, Tcherkez G, Cornic G, De Paepe R, Naik R, Ghashghaie J, Streb P.** 2006b. The lack of mitochondrial complex I in a CMSII mutant of *Nicotiana sylvestris* increases photorespiration through an increased internal resistance to CO2 diffusion. Journal of Experimental Botany 57, 3195-3207.

**Proctor MCF.** 1982. Physiological ecology: water relations, light and temperature responses, carbon balance. In: Smith AJE, Bates JW, eds. Bryophyte ecology. Dordrecht: Springer, 333-381.

**Qiu N, Lu Q, Lu C.** 2003. Photosynthesis, photosystem II efficiency and the xanthophyll cycle in the salt‐adapted halophyte *Atriplex centralasiatica*. New Phytologist 159, 479-486.

**Rabhi M, Giuntini D, Castagna A, *et al*.** 2010. *Sesuvium portulacastrum* maintains adequate gas exchange, pigment composition, and thylakoid proteins under moderate and high salinity. Journal of Plant Physiology 167, 1336-1341.

**Ramalho JC, Pons TL, Groeneveld HW, Nunes MA.** 1997. Photosynthetic responses of *Coffea arabica* leaves to a short‐term high light exposure in relation to N availability. Physiologia Plantarum 101, 229-239.

**Ramalho JC, Quartin VL, Leitão E, *et al*.** 2003. Cold acclimation ability and photosynthesis among species of the tropical *Coffea* genus. Plant Biology 5, 631-641.

**Rastorfer JR.** 1970. Effects of light intensity and temperature on photosynthesis and respiration of two East Antarctic mosses, *Bryum argenteum* and *Bryum antarcticum*. Bryologistn 73, 544-556.

**Ratnayaka HH, Molin WT, Sterling TM.** 2003. Physiological and antioxidant responses of cotton and spurred anoda under interference and mild drought. Journal of Experimental Botany 54, 2293-2305.

**Rice SK, Aclander L, Hanson DT.** 2008. Do bryophyte shoot systems function like vascular plant leaves or canopies? Functional trait relationships in *Sphagnum* mosses (Sphagnaceae). American Journal of Botany 95, 1366-1374.

**Riis T, Olesen B, Katborg CK, Christoffersen KS.** 2010. Growth rate of an aquatic bryophyte (*Warnstorfia fluitans* (Hedw.) Loeske) from a high Arctic lake: Effect of nutrient concentration. Arctic 63, 100-106.

**Rincon E, Grime JP.** 1989. An analysis of seasonal patterns of bryophyte growth in a natural habitat. The Journal of Ecology 77, 447-455.

**Rincon E.** 1988. The effect of herbaceous litter on bryophyte growth. Journal of Bryology 15, 209-217.

**Ripley BS, Gilbert ME, Ibrahim DG, Osborne CP.** 2007. Drought constraints on C4 photosynthesis: stomatal and metabolic limitations in C3 and C4 subspecies of *Alloteropsis semialata*. Journal of Experimental Botany 58, 1351-1363.

**Roig-Oliver M, Bresta P, Nadal M, *et al*.** 2020. Cell wall composition and thickness affect mesophyll conductance to CO2 diffusion in *Helianthus annuus* under water deprivation. Journal of Experimental Botany 71, 7198-7209.

**Roig‐Oliver M, Douthe C, Bota J, Flexas J.** 2021. Cell wall thickness and composition are related to photosynthesis in Antarctic mosses. Physiologia Plantarum 173, 1914-1925.

**Romose V.** 1940. Ökologische Untersuchungen über Homalothecium sericeum. Seine Wachstumperiode und seine Stoffproducktion. Dansk Bot. Ark. 10, 1-138.

**Rudolph H.** 1968. Gaswechselmessungen an *Sphagnum magellanicum*. Planta 79, 35-43.

**Sáez PL, Bravo LA, Cavieres LA, *et al*.** 2017. Photosynthetic limitations in two Antarctic vascular plants: importance of leaf anatomical traits and Rubisco kinetic parameters. Journal of Experimental Botany 68, 2871-2883.

**Sasaki H, Samejima M, Ishii R.** 1996. Analysis by δ13C measurement on mechanism of cultivar difference in leaf photosynthesis of rice (*Oryza sativa* L.). Plant and cell physiology 37, 1161-1166.

**Savitch LV, Leonardos ED, Krol M, *et al*.** 2002. Two different strategies for light utilization in photosynthesis in relation to growth and cold acclimation. Plant, Cell & Environment 25, 761-771.

**Scafaro AP, Von Caemmerer S, Evans JR, Atwell BJ.** 2011. Temperature response of mesophyll conductance in cultivated and wild *Oryza* species with contrasting mesophyll cell wall thickness. Plant, Cell & Environment 34, 1999-2008.

**Schindler C, Lichtenthaler HK.** 1996. Photosynthetic CO2-assimilation, chlorophyll fluorescence and zeaxanthin accumulation in field grown maple trees in the course of a sunny and a cloudy day. Journal of Plant Physiology 148, 399-412.

**Schulte M, Offer C, Hansen U.** 2003. Induction of CO2-gas exchange and electron transport: comparison of dynamic and steady-state responses in *Fagus sylvatica* leaves. Trees 17, 153-163.

**Seidel DA.** 1976. Quantitativ-analytische Untersuchungen der Moosvegetation in Fichtenwaldern des Schönbuchs und der Schwäbischen Alb. Flora 165, 139-162.

**Sharkey TD, Badger MR, Von Caemmerer S, Andrews TJ.** 2001. Increased heat sensitivity of photosynthesis in tobacco plants with reduced Rubisco activase. Photosynthesis Research 67, 147-156.

**Sharkey TD, Berry JA, Sage RF.** 1988. Regulation of photosynthetic electron-transport in *Phaseolus vulgaris* L., as determined by room-temperature chlorophyll a fluorescence. Planta 176, 415-424.

**Shi Z, Haworth M, Feng Q, Cheng R, Centritto M.** 2015. Growth habit and leaf economics determine gas exchange responses to high elevation in an evergreen tree, a deciduous shrub and a herbaceous annual. AoB PLANTS 7, plv115; doi:10.1093/aobpla/plv115

**Silvola J, Heikkinen S.** 1979. CO2 exchange in the *Empetrum nigrum-Sphagnum fuscum* community. Oecologia 37, 273-283.

**Smith RIL.** 1999. Biological and environmental characteristics of three cosmopolitan mosses dominant in continental Antarctica. Journal of Vegetation Science 10, 231-242.

**Snider JL, Collins GD, Whitaker J, Perry CD, Chastain DR.** 2014. Electron transport through photosystem II is not limited by a wide range of water deficit conditions in field‐grown *Gossypium hirsutum*. Journal of Agronomy and Crop Science 200, 77-82.

**Šprtová M, Špunda V, Kalina J, Marek MV.** 2003. Photosynthetic UV-B response of beech (Fagus sylvatica L.) saplings. Photosynthetica 41, 533-543.

**Sree KS, Sudakaran S, Appenroth KJ.** 2015. How fast can angiosperms grow? Species and clonal diversity of growth rates in the genus *Wolffia* (Lemnaceae). Acta Physiologiae Plantarum 37, 1-7.

**Stålfelt MG.** 1937. Der Gasaustausch der Moose. Planta 27, 30-60.

**Štroch M, Vrábl D, Podolinská J, Kalina J, Urban O, Špunda V.** 2010. Acclimation of Norway spruce photosynthetic apparatus to the combined effect of high irradiance and temperature. Journal of Plant Physiology 167, 597-605.

**Stylinski CD, Oechel WC, Gamon JA, *et al*.** 2000. Effects of lifelong [CO2] enrichment on carboxylation and light utilization of *Quercus pubescens* Willd. examined with gas exchange, biochemistry and optical techniques. Plant, Cell & Environment 23, 1353-1362.

**Sugiura D, Terashima I, Evans JR.** 2020. A decrease in mesophyll conductance by cell-wall thickening contributes to photosynthetic downregulation. Plant Physiology 183, 1600-1611.

**Sveinbjörnsson B, Oechel WC.** 1981. Controls on CO2 Exchange in Two *Polytrichum* Moss Species. 1. Field Studies on the Tundra near Barrow, Alaska. Oikos 36, 114-128.

**Syvertsen JP, Lloyd J, McConchie C, Kriedemann PE, Farquhar GD.** 1995. On the relationship between leaf anatomy and CO2 diffusion through the mesophyll of hypostomatous leaves. Plant, Cell & Environment 18, 149-157.

**Tezara T, Mitchell V, Driscoll SP, Lawlor DW.** 2002. Effects of water deficit and its interaction with CO2 supply on the biochemistry and physiology of photosynthesis in sunflower. Journal of Experimental Botany 53: 1781-1791.

**Théroux-Rancourt G, Éthier G, Pepin S.** 2014. Threshold response of mesophyll CO2 conductance to leaf hydraulics in highly transpiring hybrid poplar clones exposed to soil drying. Journal of Experimental Botany 65, 741-753.

**Tholen D, Boom C, Noguchi KO, Ueda S, Katase T, Terashima I.** 2008. The chloroplast avoidance response decreases internal conductance to CO2 diffusion in *Arabidopsis thaliana* leaves. Plant, Cell & Environment 31, 1688-1700.

**Titus JE, Wagner DJ.** 1984. Carbon balance for two *Sphagnum* mosses: water balance resolves a physiological paradox. Ecology 65, 1765-1774.

**Tomás M, Flexas J, Copolovici L, *et al*.** 2013. Importance of leaf anatomy in determining mesophyll diffusion conductance to CO2 across species: quantitative limitations and scaling up by models. Journal of Experimental Botany 64, 2269-2281.

**Tomás M, Medrano H, Brugnoli E, *et al*.** 2014. Variability of mesophyll conductance in grapevine cultivars under water stress conditions in relation to leaf anatomy and water use efficiency. Australian Journal of Grape and Wine Research 20, 272-280.

**Tosens T, Niinemets U, Vislap V, Eichelmann H, Castro Diez P.** 2012a. Developmental changes in mesophyll diffusion conductance and photosynthetic capacity under different light and water availabilities in *Populus tremula*: how structure constrains function. Plant, Cell & Environment 35, 839-856.

**Tosens T, Niinemets Ü, Westoby M, Wright IJ.** 2012b. Anatomical basis of variation in mesophyll resistance in eastern Australian sclerophylls: news of a long and winding path. Journal of Experimental botany 63, 5105-5119.

**Tsonev T, Velikova V, Georgieva K, Hyde PF, Jones HG.** 2003. Low temperature enhances photosynthetic down‐regulation in French bean (*Phaseolus vulgaris* L.) plants. Annals of Botany 91, 343-352.

**Uchida M, Muraoka H, Nakatsubo T, Bekku Y, Ueno T, Kanda H, Koizumi H.** 2002. Net photosynthesis, respiration, and production of the moss *Sanionia uncinata* on a glacier foreland in the High Arctic, Ny-Ålesund, Svalbard. Arctic, Antarctic, and Alpine Research 34, 287-292.

**Urban L, Jegouzo L, Damour G, Vandame M, François C.** 2008. Interpreting the decrease in leaf photosynthesis during flowering in mango. Tree Physiology 28, 1025-1036.

**Venema JH, Posthumus F, De Vries M, Van Hasselt PR.** 1999a. Differential response of domestic and wild *Lycopersicon* species to chilling under low light: growth, carbohydrate content, photosynthesis and the xanthophyll cycle. Physiologia Plantarum 105, 81-88.

**Venema JH, Posthumus F, van Hasselt PR.** 1999b. Impact of suboptimal temperature on growth, photosynthesis, leaf pigments and carbohydrates of domestic and high-altitude wild *Lycopersicon* species. Journal of Plant Physiology 155, 711-718.

**Vilagrosa A, Morales F, Abadía A, Bellot J, Cochard H, Gil-Pelegrin E.** 2010. Are symplast tolerance to intense drought conditions and xylem vulnerability to cavitation coordinated? An integrated analysis of photosynthetic, hydraulic and leaf level processes in two Mediterranean drought-resistant species. Environmental and Experimental Botany 69, 233-242.

**von Caemmerer S, Evans JR.** 2015. Temperature responses of mesophyll conductance differ greatly between species. Plant, Cell & Environment 38, 629-637.

**Vyas P, Bisht MS, Miyazawa SI, *et al*.** 2007. Effects of polyploidy on photosynthetic properties and anatomy in leaves of *Phlox drummondii*. Functional Plant Biology 34, 673-682.

**Wagner S, Zotz G, Allen NS, Bader MY.** 2013. Altitudinal changes in temperature responses of net photosynthesis and dark respiration in tropical bryophytes. Annals of Botany 111, 455-465.

**Waite M, Sack L.** 2010. How does moss photosynthesis relate to leaf and canopy structure? Trait relationships for 10 Hawaiian species of contrasting light habitats. New phytologist 185, 156-172.

**Wang Z, Liu X, Bao W.** 2016. Higher photosynthetic capacity and different functional trait scaling relationships in erect bryophytes compared with prostrate species. Oecologia 180, 359-369.

**Warren CR, Adams MA, Chen Z.** 2000. Is photosynthesis related to concentrations of nitrogen and Rubisco in leaves of Australian native plants? Functional Plant Biology 27, 407-416.

**Warren CR, Aranda I, Cano FJ.** 2011. Responses to water stress of gas exchange and metabolites in *Eucalyptus* and *Acacia* spp. Plant, Cell & Environment 34, 1609-1629.

**Warren CR, Dreyer E.** 2006. Temperature response of photosynthesis and internal conductance to CO2: results from two independent approaches. Journal of Experimental Botany 57, 3057-3067.

**Warren CR, Livingston NJ, Turpin DH.** 2004. Water stress decreases the transfer conductance of Douglas-fir (*Pseudotsuga menziesii*) seedlings. Tree Physiology 24, 971-979.

**Warren CR, Löw M, Matyssek R, Tausz M.** 2007. Internal conductance to CO2 transfer of adult *Fagus sylvatica*: variation between sun and shade leaves and due to free-air ozone fumigation. Environmental and Experimental Botany 59, 130-138.

**Warren CR.** 2008. Does growth temperature affect the temperature responses of photosynthesis and internal conductance to CO2? A test with *Eucalyptus regnans*. Tree Physiology 28, 11-9.

**Warren CR.** 2011. How does P affect photosynthesis and metabolite profiles of *Eucalyptus globulus*? Tree Physiology 31, 727-739.

**Weraduwage SM, Kim SJ, Renna L, Anozie FC, Sharkey TD, F. Brandizzi.** 2016. Pectin methylesterification impacts the relationship between photosynthesis and plant growth. Plant Physiology 171, 833-848.

**Wilson ME.** 1990. Morphology and photosynthetic physiology of *Grimmia antarctici* from wet and dry habitats. Polar Biology 10, 337-341.

**Xiong D, Huang J, Peng S, Li Y.** 2017a. A few enlarged chloroplasts are less efficient in photosynthesis than a large population of small chloroplasts in *Arabidopsis thaliana*. Scientific Reports 7, 1-2.

**Xiong D, Liu XI, Liu L, Douthe C, Li Y, Peng S, Huang J.** 2015. Rapid responses of mesophyll conductance to changes of CO2 concentration, temperature and irradiance are affected by N supplements in rice. Plant, Cell & Environment 38, 2541-2550.

**Xiong D, Liu XI, Liu L, Douthe C, Li Y, Peng S, Huang J.** 2017b. Rapid responses of mesophyll conductance to changes of CO2 concentration, temperature and irradiance are affected by N supplements in rice. Plant, Cell & Environment 38, 2541-2550.

**Xu HL, Gauthier L, Desjardins Y, Gosselin A.** 1997. Photosynthesis in leaves, fruits, stem and petioles of greenhouse-grown tomato plants. Photosynthetica 33, 113-123.

**Yamaguchi M, Otani Y, Li P, *et al*.** 2014. Effects of long-term exposure to ammonium sulfate particles on growth and gas exchange rates of *Fagus crenata*, *Castanopsis sieboldii*, *Larix kaempferi* and *Cryptomeria japonica* seedlings. Atmospheric Environment 97, 493-500.

**Yamaguchi M, Watanabe M, Matsuo N, *et al*.** 2007. Effects of nitrogen supply on the sensitivity to O3 of growth and photosynthesis of Japanese beech (*Fagus crenata*) seedlings. Water, Air, & Soil Pollution: Focus 7, 131-136.

**Yamori W, Suzuki K, Noguchi KO, Nakai M, Terashima I.** 2006. Effects of Rubisco kinetics and Rubisco activation state on the temperature dependence of the photosynthetic rate in spinach leaves from contrasting growth temperatures. Plant, Cell & Environment 29, 1659-1670.

**Yang ZH, Huang W, Yang QY, Chang W, Zhang SB.** 2018. Anatomical and diffusional determinants inside leaves explain the difference in photosynthetic capacity between *Cypripedium* and *Paphiopedilum*, Orchidaceae. Photosynthesis Research 136, 315-328.

**Ye M, Zhang Z, Huang G, Xiong Z, Peng S, Li Y.** 2020. High leaf mass per area *Oryza* genotypes invest more leaf mass to cell wall and show a low mesophyll conductance. AoB Plants 12, plaa028.

**Yiotis C, Manetas Y.** 2010. Sinks for photosynthetic electron flow in green petioles and pedicels of Zantedeschia aethiopica: evidence for innately high photorespiration and cyclic electron flow rates. Planta 232, 523-531.

**Zhang SB, Hu H, Li ZR.** 2008. Variation of photosynthetic capacity with leaf age in an alpine orchid, *Cypripedium flavum*. Acta Physiologiae Plantarum 30, 381-388.

**Zhang SB, Hu H, Xu K, Li ZR, Yang YP.** 2007. Flexible and reversible responses to different irradiance levels during photosynthetic acclimation of *Cypripedium guttatum*. Journal of plant physiology 164, 611-620.

**Zhao CM, Wang GX, Wei XP, *et al*.** 2007. Effects of groundwater depth variation on photosynthesis and photoprotection of *Elaeagnus angustifolia* L. Trees 21, 55-63.

**Zhu JJ, Zhang JL, Liu HC, Cao KF.** 2009. Photosynthesis, non‐photochemical pathways and activities of antioxidant enzymes in a resilient evergreen oak under different climatic conditions from a valley‐savanna in Southwest China. Physiologia Plantarum 135, 62-72.