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Functional Plant Biology

Supplementary Material

Linking structure to function: the connection between mesophyll structure and intrinsic water use efficiency

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Supplement

S1 References used in Figure2

Panel A

Trueba S, Théroux-Rancourt G, Earles JM, Buckley TN, Love D, Johnson DM, Brodersen CR. 2022. The 3D construction of leaves is coordinated with water use efficiency in conifers. New Phytologist 233: 851–861

Panel B

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: 5191-5205

Pandey S, Kumar N, Kushwaha R. 2006. Morpho-anatomical and physiological leaf traits of two alpine herbs, *Podophyllum hexandrum* and *Rheum emodi* in the Western Himalaya under different irradiances. Photosynthetica 44: 11–16

Trueba S, Théroux-Rancourt G, Earles JM, Buckley TN, Love D, Johnson DM, Brodersen CR. 2022. The 3D construction of leaves is coordinated with water use efficiency in conifers. New Phytologist 233: 851–861

Yang Z-H, Huang W, Yang Q-Y, Chang W, Zhang S-B. 2017. Anatomical and diffusional determinants inside leaves explain the difference in photosynthetic capacity between *Cypripedium* and *Paphiopedilum*, Orchidaceae. Photosynthesis research 136: 315-328

Panel C

Trueba S, Théroux-Rancourt G, Earles JM, Buckley TN, Love D, Johnson DM, Brodersen CR. 2022. The 3D construction of leaves is coordinated with water use efficiency in conifers. New Phytologist 233: 851–861

Panel D

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

Kawase M, Hanba YT, Katsuhara M. 2013. The photosynthetic response of tobacco plants overexpressing ice plant aquaporin McMIPB to a soil water deficit and high vapor pressure deficit. Journal of Plant Research 126: 517–527

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Yang Z-H, Huang W, Yang Q-Y, Chang W, Zhang S-B. 2017. Anatomical and diffusional determinants inside leaves explain the difference in photosynthetic capacity between *Cypripedium* and *Paphiopedilum*, Orchidaceae. Photosynthesis research 136: 315-328

S2 Relationship between S_c and S_m

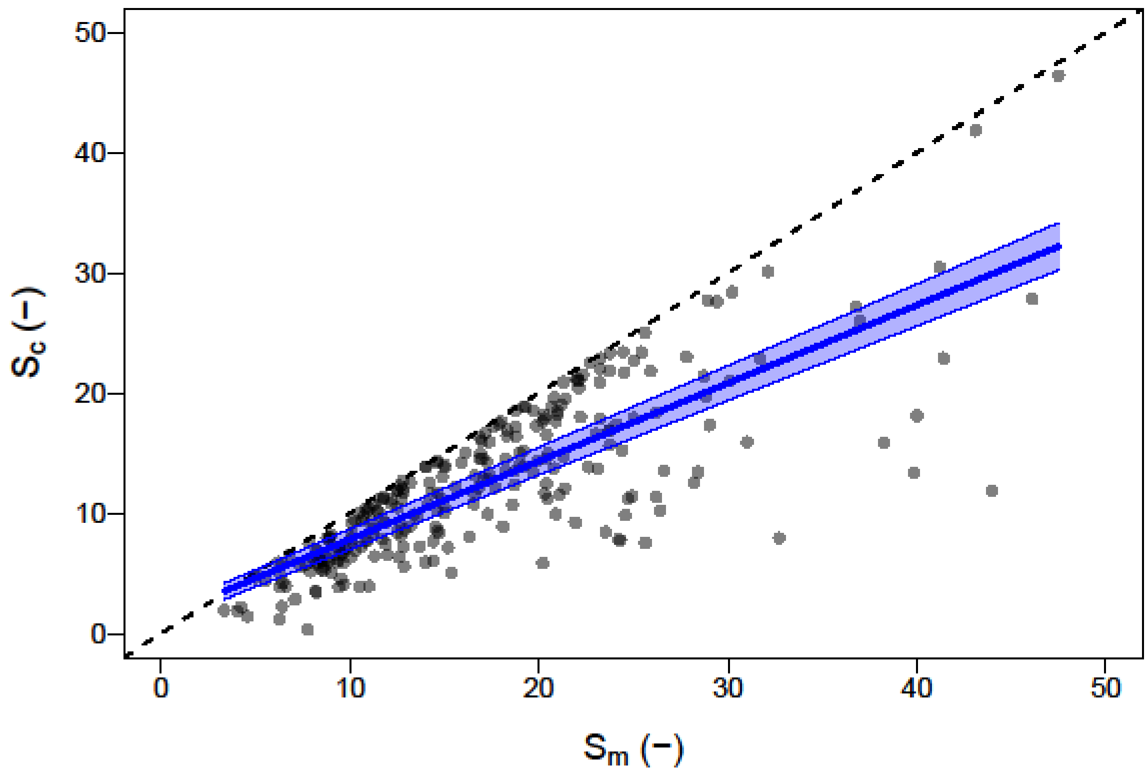

Fig. S1 Surface area of chloroplast exposed to IAS (S_c) as a function of mesophyll surface area per unit of total leaf area (S_m).

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