Supporting Information

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Fig. S1. Autoradiographs of leaf discs of selected species. Leaf tissue was abraded, and discs were floated on a solution containing [¹⁴C]sucrose for 1 h. Discs were then washed extensively, flash-frozen, lyophilized, pressed thin, and exposed to X-ray film for 24–48 h. Minor veins are visible in the autoradiographs of all species except *R. schlippenbachii, F. sylvatica, S. japonica*, and *A. pavia*. Leaf discs are 8 mm in diameter.



Fig. S2. Concentrations of transport sugars in the leaves of 45 species in 36 dicotyledonous families. Data are from Fig. 2 but are expressed on a percentage basis. Error bars are SE (n = 3).

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Concentration of sucrose + sugar alcohol (mOsm·kg⁻¹)

Fig. S3. The combined concentrations of sucrose and sugar alcohol in leaf tissue of different plants (calculated as osmolalities) plotted against leaf sap osmolality, as in Fig. 3. Genus names corresponding to the data points are provided. The dashed line is the theoretical osmolality of the leaf sap if it were the sum of a basal value of 250 mOsm plus the sucrose and sugar alcohol alone.