

## Water Relations of Higher Plants

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Water relations of higher plants are important in controlling many whole-plant processes such as gas exchange and transpiration (and thus efficiency water use) and osmotic (salt and water) adaptation. The understanding of the mechanisms behind these phenomena at the level of organs (tissues and the vascular system) requires the knowledge of water-relation parameters at the cellular level. The pressure-probe technique introduced recently by Hüskens, Steudle and Zimmermann [1,2] provides the possibility of measuring these parameters, i.e. the hydraulic conductivity, the volumetric elastic modulus and the half-times (rate constants) of water exchange of individual cells. The technique, therefore, allows a detailed description of water transport across higher-plant tissues. Results obtained by the method on different species are discussed in relation to the physics of water transport in higher-plant tissues and organs.

1. Hüskens, D., Steudle, E. and Zimmermann, U. (1978) *Plant Physiol.* 61, 158-163
2. Zimmermann, U. and Steudle, E. (1978) *Adv. Bot. Res.* 6, 45-117