Rengel, Z. (ed.): **Handbook of Plant Growth. pH as the Master Variable.** – Marcel Deckker, New York – Basel 2002. ISBN 0-8247-0761-3. 446 pp., USD 175.00.

This book aims to provide a unifying view of the role of pH in plant growth, taking into account molecular, biochemical, functional, structural, and developmental factors, as well as environmental processes involved in plant interaction with the biotic and abiotic environment. Sixteen articles of the book have been written by 28 authors from Australia (5), Belgium (1), Germany (6), Denmark (2), Japan (2), The Netherlands (2), Poland (1), Spain (2), and the USA (7).

The book covers four main subjects: (*1*) the dynamics of H^+ fluxes across membranes such as the plasma membrane, chloroplast thylakoid, tonoplast, mitochondria, *etc.*, and (*2*) the role of H^+ activity (pH) in cellular, subcellular, and whole plant processes (plasma membrane H^+-ATPase; vacuolar membrane H^+-ATPase and H^+-PPase; the cytoplasmic pH-stat; confocal pH topography in plant cells: shifts of proton distribution involved in plant signalling; pH as a signal and regulator of membrane transport; the role of the apoplastic pH in cell wall extension and cell enlargement; mechanisms and physiological roles of proton movements in plant thylakoid membranes; dynamics of H^+ fluxes in mito-chondrial membrane).

(*3*) Further group of articles deals with the role of pH and H^+ fluxes in soil biotic processes involving microorganisms as well as in soil–plant–microbe interactions (H^+ fluxes in nitrogen assimilation by plants; Crassulacean acid metabolism: a special case of pH regulation and H^+ fluxes; dynamics of H^+ fluxes in the plant apoplast; H^+ currents around plant roots).

(*4*) The following articles summarise recent knowledge on the interdependence of pH changes and soil abiotic processes [role of pH in availability of ions in soil; regulation of microbial processes by soil pH (rhizosphere, plant disease, biodegradation); the role of acid pH in symbiosis between plants and soil organisms; distribution of plant species in relation to pH of soil and water].

In almost all articles, the readers of Photosynthetica can find useful information on molecular biology, biochemistry, physiology, genetics, and ecophysiology of photosynthesis and related processes: [chloroplast pigments, mainly carotenoids (β-carotene, xanthophyll, violaxanthin, *etc.*), biochemistry of C_3 and C_4 photosynthesis and Crassulacean acid metabolism (abscisic acid and CAM), electron transport chain in photosynthesis and respiration (electron transport components in chloroplast thylakoid, cytochrome, ferredoxin, photosystems 1 and 2), tonoplast, phospho*enol*pyruvate carboxylase and ribulose-1,5-bisphosphate carboxylase/oxygenase, carbon dioxide uptake and photosynthate formation (oxygen evolution, stomata guard cells, phloem loading), respiration (Krebs cycle), *etc.*].

Generally, the articles presented are an excellent source of recent information on the field. Individual chapters are accompanied with relevant literature (1745 references altogether). The book is provided by a comprehensive subject and plant index. I recommend this Handbook to plant scientists interested in the fields treated.

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