

Foyer, C.H., Quick, W.P. (ed.): **A Molecular Approach to Primary Metabolism in Higher Plants**. - Taylor & Francis, London - Bristol 1997. ISBN 0-7484-0419-8 (paperback). 347 pp., GBP 19.95 (paperback).

Molecular approach has brought advances in studying primary metabolism of plants. New achievements in this field are summed up in 16 chapters of the reviewed book; they were written by 29 authors from the U.K. (10), Germany and the U.S.A. (6 each), France (4), the Netherlands (2), and Israel (1).

Section 1 of the book (8 chapters) deals with primary nitrogen assimilation in relation to carbon assimilation and partitioning. The chapters explain and discuss the efficiency and control of the photosynthetic electron transport system (includes also quantum yield of photochemistry, detoxification of active oxygen species, functions of superoxide dismutases and other systems associated with stress protection), the regulation and control of carbon assimilation cycles, carboxylases and other enzymes, genetic cycle modifications, starch synthesis and degradation in chloroplasts,  $\text{CO}_2$  fixation in fruits, substance transport across plastid envelope, saccharose biosynthesis and metabolism, genetics of carbon and nitrogen assimilation, relationships and regulation of C and N metabolism, biosynthesis of amino acids, *etc.*

Section 2 contains five chapters on compartmentation, transport, and whole plant interactions in carbon and nitrogen metabolism. The role of plasmodesmal-mediated communication networks in cell-to-cell transfer of substances is discussed as well as nitrogen uptake and assimilation in roots and nodules, and the functions of mycorrhiza. Section 3 (3 chapters) deals with related metabolic processes such as respiration and the respective enzymes, oil biosynthesis and lipid composition, and links between resource use efficiency and crop performance (yields, photosynthetic characteristics, transport, *etc.*). A detailed subject and plant index is supplemented.

The book is a useful source of information (many references per chapter) for researchers working in plant physiology, biotechnology, biochemistry, crop production, and plant breeding.

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