Zamski, E., Schaffer, A.A. (ed.): **Photoassimilate Distribution in Plants and Crops. Source-Sink Relationships.** - Marcel Dekker, New York - Basel - Hong Kong 1996. 905 pp. 275.00 USD. ISBN 0-8247-9440-0.

Source-sink relationships is a typical interdisciplinary research field of plant science. The reviewed handbook presents papers covering the individual components of photosynthate distribution in plants together with their integration on cell, plant and crop levels. It discusses the impact of genetic, environmental, and agrotechnical factors on the parts of whole-plant source-sink physiology. The editors of the book–professor of botany at the Hebrew University of Jerusalem, and research scientist of Volcani Center in Bet Dagan, Israel–succeeded in assembling internationally acclaimed experts to prepare contributions to this book. Thirty seven comprehensive review articles have been prepared by 65 scientists from Australia, Canada, France, Germany, Israel, Ivory Coast, New Zealand, South Africa, Switzerland, The Netherlands, UK, and USA.

The book is divided into three parts. The components that constitute the field of source sink relationships, and ecological, metabolic, physiological, and anatomical perspectives are treated in the Part I–Physiological and metabolic aspects of the components of source-sink relationships. Production of primary photosynthates, respiration, growth analysis, saccharide metabolism (galactosyl-sucrose oligosaccharides, sugar alcohols), reserve saccharides (starch, fructans, sucrose), phloem loading, sugar transporters in plants, long- and short-distance transport, and anatomy and physiology of sink cells are the main topics of 12 papers presented in this section.

The integrative Part II–The interaction of source-sink components deals with the interactions between sources and sinks, the genetic control of carbohydrate metabolism and source-sink relationships, and the role of various biotic and abiotic factors in these relationships. Nine papers of this part are devoted to communication in leaves, biochemical genetics and genetic manipulation of saccharide metabolism, effect of global climate change on sink-source relationships (temperature, atmospheric carbon dioxide, drought, irradiance, light quality), hormonal regulation and potential control mechanisms, photosynthate partitioning and consumption in dinitrogen-fixing legumes, and effects of pathogens and parasitic plants on sink-source relationships.

An interdisciplinary view on the photoassimilate partitioning and source-sink relationships of 16 selected crops is presented in the Part III–Whole plant source-sink relationships of selected crops. These are wheat, rice, maize, soybean, pea, sugarcane, carrots, sugar beet, tomato, cucurbits, alfalfa, turfgrasses, citrus, *Prunus*, grape, and rose (16 papers).

The comprehensive book is excellently edited and produced, and contains fairly extensive Organism and Subject indexes. It may be recommended to all plant scientists and graduate students interested in interdisciplinary approach to photosynthate and photoassimilate studies.

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