

Cram, W.J., De Kok, L.J., Stulen, I., Brunold, C., Rennenberg, H. (ed.): **Sulphur Metabolism in Higher Plants**. Molecular, Ecophysiological and Nutritional Aspects. - Backhuys Publishers, Leiden 1997. 368 pp. US \$ 175.00. ISBN 90-73348-13-7.

This book contains contributions presented at the Workshop on sulphur metabolism in higher plants. The meeting was held at the University of Newcastle upon Tyne in April 1996. The book has been opened by several general contributions, which probably belong to plenary lectures. This first part of the book is divided into three sections. Section 1 covers sulphur uptake, transport and reduction, section 2 deals with sulphur metabolism, section 3 involves nutritional and ecophysiological aspects of sulphur metabolism. The articles represent such topics as sulphate transporters, glutathione biosynthesis and significance of sulphur for the quality of domesticated plants.

Next book section involves remaining symposium contributions. They deal with similar phenomena as previous articles, *i.e.* mechanism and molecular biology of sulphur uptake and metabolism. Studies on many enzymes working in sulphate reduction are discussed. Further, there is metabolism of important sulphur-containing compounds such as cysteine, methionine and glutathione. Molecule of glutathione is especially important for a plant metabolism. It is clear from recent research that glutathione plays decisive role in the plant defence mechanism and tolerance of plants against oxidative stress as it serves as important cellular antioxidant. Oxidative stress is provoked during various stress conditions a plant encounters during its life-span. Moreover, glutathione participates also in detoxification processes. Studies using transgenic plants which overproduced glutathione or some enzyme of its biosynthesis surprisingly show increased oxidative stress in these plants. On the other hand, expressing of cysteine synthase leads to reduced sensitivity of plant to sulphur dioxide and paraquat, what has important implications in defence strategy of environmental pollutants. The final part of the book is addressed to an importance of sulphur nutrition for plant growth and metabolism. The supply of various sulphur concentrations influences the accumulation of individual sulphur compounds as well as plant productivity at all. The book has been closed with two interesting appendices. One of them, really interesting, is about spelling of the element S, which should be, according to an expert, correctly „sulphur“ as it comes from Latin. This cannot help to decide between the two possibilities currently used (sulphur or sulfur).

The book contains the progress of recent research and is useful for scientists in every field of plant physiology and pathology, because sulphur containing compound have importance in entire plant metabolism.

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