

Lichtenthaler, H.K. (ed.): **Vegetation Stress**. - Gustav Fischer, Stuttgart - Jena - New York 1996. 649 pp. DM 298.00. ISBN 3-437-20544-7.

The book represents a collection of contributions from Symposium on Vegetation Stress, held in Munich-Neuherberg, June 19-21, 1995. All contributions were also reprinted in *Journal of Plant Physiology*, Vol. 148, 1996, with an identical numbering.

The volume is divided into six sections according to the main stress factor such as UV-B effects and photoinhibition in plants, ozone-induced stress responses, air pollution and increased CO₂ level, chilling sensitivity and frost tolerance, general physiology, and reflectance and fluorescence techniques in stress detection. Nevertheless, the division is formal and limited only to Contents, and the sections are not distinguished one from the other in the volume itself. Indeed, some contributions would rather find their place in another part of the book (e.g. Kraft *et al.*, Meinander *et al.*) or would not be distinguished in special section at all. This is valid particularly for the section on chilling sensitivity, where only four contributions are included. The main emphasis was given to stress effects induced by UV-B radiation (18), ozone (14), and air pollutants (19). The comprehensive section (20) is devoted to optical techniques such as chlorophyll fluorescence, bluegreen fluorescence, and reflectance, and instrumentations for far distance detection in plants.

The book opens with an editor's introduction to the present stress concept in plants and the definition of plant stress. Some reviews (7) are included, but the majority of following contributions represents the original papers describing completely new results or giving further evidence for already established causal relationship. The first part of the volume starts with a short summary of photomorphogenetic effects of UV-B radiation (Barnes *et al.*). Another review on the potential sensitivity of tropical plants to increased UV-B summarizes present state of knowledge on this topic. Other contributions dealing with UV-B effects in various ecosystems or important crop plants using different methods and approaches for the study. In the section on ozone, there is a collage of contributions on the effect of ozone itself or in a combination with drought or other air pollutants. Unfortunately, there is no strong, authoritative review which could help a non-specialist for better orientation in this topic, and which could serve as a source of basic references. The section on general physiology and stress topics is not focused on a specific subarea, but rather contains contributions on very diverse systems such as soil salinity effects on crop growth or the preparation of carotenoid enriched vesicles for use in Raman studies. The broad orientation on methodological aspects in this volume is undoubtedly reflected by the contributions of the main editor, who is the author or co-author of about 15 articles, particularly in the part dealing with optical techniques in stress detection. There is no doubt, that new method using laser induced high resolution fluorescence imaging system sets a new standard of the stress detection in plants.

The wide range of contributions in this book is of a high standard, and it will be useful, as the editor aims, as a state-of-the art overview of the subject area.

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