

Fendrik, I., Bors, J.: **Strahlenschäden an Pflanzen, Handbuch der Pflanzenkrankheiten. Band 1. Die nichtparasitären Krankheiten**, 6. Lieferung. - Verlag Paul Parey, Berlin - Hamburg 1991. 206 pp. DM 128.00.

The use of nuclear techniques in industry, medicine and agriculture is increasing. Although the releases of radioactivity into the environment are mostly controlled (with few, but dangerous exceptions) a certain rise in human, animal and plant exposure to radiation may occur. The introductory part of this publication presents a brief overview on the types and sources of radiation, on the effects of radiation on proteins, lipids, nucleic acids and hydrocarbons, and it compares the effects of radiation and chemical agents on plants. The following chapters deal with 6 main effects induced by radiation on plants: 1) lethality, 2) chromosome aberrations, 3) mutation, 4) physiological damage, 5) morphological changes, and 6) stimulation. That part of the book is interesting, but most data may be found in textbooks on radiation biology. More important are the following chapters dealing with the factors (*e.g.* temperature, post-radiation seed storage, seed water content, chemical post-radiation treatment *etc.*) modifying the effects of radiation on plants and the chapters on the effects of radiation on various crop and ornamental plants. For a large number of plants data on LD 10, 50 and 90 are given, and in some cases data for the yield reduction doses can be found. Of interest is also the chapter on the effects of radiation on various ecosystems.

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Van Groenendael, J., de Kroon, H. (ed.): **Clonal Growth in Plants: Regulation and Function**. - SPB Academic Publishing, The Hague 1990. 196 pp. US \$ 34.00.

The desire for a better understanding of the proximate mechanisms that regulate the clonal growth led to organizing a small international workshop at Schin-op-Geul (The Netherlands) from 14 to 17 September 1988. Much of what was discussed there is published in the reviewed paperback booklet.

The volume is divided into two parts. Part 1, "Regulation", contains the contributions on the phylogeny, ontogeny and clonal growth in vascular plants; the source-sink relations of interconnected ramets, the phenological effects on the clone development and demography and on the control and consequences of the spatial structure of clonal plants.

Part 2, "Functions", includes the papers dealing with the hierarchical selection and risk spreading in clonal plants; the growth rules, the models of clonal growth and the directions for the future work, the resource partitioning in relation to the clonal growth strategy and the environmental features of the Arctic and Subarctic which may favour the clonal growth. It also explores the similarities and differences in the morphology, physiology and demography of two phylogenetically unrelated clonal species, *Lycopodium annotinum* and *Carex bigelowii*, and the clonal growth patterns among bryophytes. In the last chapter, the editors summarize what is known about the regulation of the clonal growth traits, identify the questions to be answered and formulate suggestions for future research. The booklet is supplemented by Taxonomic and Subject indexes.

The volume compiles the up-to-date knowledge of these topics and draws attention to the areas which have been poorly represented in the literature. It also seeks to bridge the gap between plant physiologists, morphologists and evolutionary ecologists and provides a basis and guide for future research.

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