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## Samenvatting

### *Drie-dimensionale weergave van de ontwikkeling van valse meeldauw in een spinaziegewas*

De ontwikkeling van valse meeldauw op spinazie (*Peronospora farinosa* f. sp. *spinaciae*) werd geanalyseerd aan de hand van drie-dimensionale grafische voorstellingen, waarbij percentage ziek bladoppervlak per bladetage werd uitgezet tegen tijd. Onderscheid werd gemaakt tussen de ontwikkeling vanuit een puntbron en vanuit een oppervlaktebron, bij inoculatie in drie groeistadia van het gewas.

Het bleek dat hierbij meer informatie kon worden verkregen over het verloop van de ziekte-ontwikkeling op de bovenste bladetages, omdat het eerste echte bladpaar langduriger en heviger sporuleert, en zo de ziekte-ontwikkeling op de overige bladetages maskeert.

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## Book review

G.M. Hoffmann, F. Nienhaus, F. Schönbeck, H.C. Weltzien & H. Wilbert, 1985. *Lehrbuch der Phytomedizin*. Second edition. Paul Parey, Berlin and Hamburg. In German, with 253 figures (of which 36 in colour) and 62 tables, 488 pp. Price hardback: DM 124.

This is a thoroughly revised and updated edition of a textbook on plant pathology and crop protection, of which the first edition appeared in 1976. The authors are German scientists who have won their spurs in various subdisciplines of plant pathology. There are six chapters.

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Chapter 1 is a short and a rather heterogeneous introduction, dealing with dissimilar subjects such as the threshold concept in crop protection and the types of jobs to be held by graduates in plant pathology.

The second chapter is comprehensive, presenting an elaborate overview of virtually all biotic and abiotic factors that can reduce crop yields. These factors include unfavourable physical and chemical conditions of the environment, weeds and all types of pathogens and of animal pests. Biotic harmful agents (including viruses) are dealt with by taxonomic grouping. Many characteristics of the taxa are given and, consequently, this chapter is rather encyclopedic.

Chapter 3 is on pathogenesis and pest attack. It describes the mechanisms by which pathogens enter and colonize the plant and the way animal pests find their hosts and inflict damage when feeding. The reader is informed about the influence of environmental conditions, changes in metabolic processes and specific reactions of the host plant. Resistance mechanisms are amply treated. Although dealing with many types of pests and pathogens, the authors have succeeded in presenting an integrated treatment of the subject.

Chapter 4 explains the principles of population dynamics and spread. Endogenous and environmental factors are described. Here again, the subject is treated in an integrated way.

Chapter 5 could well have been placed immediately after Chapter 3, as it deals with disease symptoms and types of mechanical damage by animal pests. A series of 36 figures in colour (small but most well chosen and printed) are incorporated in this chapter. The greater part of the chapter describes qualitatively pest and pathogen damage in selected crops, in relation to the course of development of the plants. These crops are: cereals, maize, potato, beet, cucurbits, cabbages, grape, alfalfa, rose and fig.

The last chapter summarizes protective measures. The various sections deal with quarantine, cultural practices, physical measures (e.g. roguing, thermal treatment), use of biocides, biological control and biotechnological methods, which here include the use of species-specific effects through the application of pheromones or the sterile-male technique. The last section is on integrated control.

Crop protection is too broad a subject for this book to be considered as a handbook, giving in full the latest information on the subject. The short lists of references scattered throughout the book seldom mention literature after 1982. As a consequence, some major works are missing, such as the 1984 edition of Bergey's Manual of Systematic Bacteriology. As the present book's title indicates, it is actually a textbook for students. Some parts present a wealth of factual information, whereas other parts explain basic principles and concepts.

Of course, there are inevitable inaccuracies on details. Some are of minor importance: *Xanthomonas hyacinthi* (= *X. campestris* pv. *hyacinthi*) is the incitant of yellow disease (Gelbfäule), not soft rot (Weichfäule, p. 48) of hyacinths; the gene-for-gene hypothesis was introduced by Flor, not Flohr (p. 237). Other are more serious, such as the incorrect definition of aggressiveness (Agressivität, p. 177) and the ineradicable and confusing double use of the word diagnosis, i.e. both in the etiological sense and as a synonym of detection, especially for virus and mycoplasma infections. The slight attention given to the modern approaches of integrated and supervised control should be regarded as a serious deficiency. Only 8 of the 456 pages of text are devoted to integrated control, which includes here pest and disease management systems involving all types of control methods as well as the application of damage thresholds for control decisions. Supervised control as a concept is not distinguished from integrated control. Warning systems, those important instruments of supervised control, are incidentally mentioned or hinted at throughout the book, but never described or exemplified.

The many figures, mostly line drawings, are clear and instructive. There is an extensive subject index. The type area contains two narrow text columns which makes easy reading but leaves little room for making notes in the margin, as students habitually do.

Despite such shortcomings, this book is good reading for students in plant pathology and crop protection, at least for those au fait with the German language.

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