

Book review

W. Bergmann (Ed.). *Ernährungsstörungen bei Kulturpflanzen, Entstehung und Diagnose*. VEB Gustav Fischer Verlag, Jena, 614 pp., 852 colour photographs, 214 tables. Price DM 109.

W. Bergmann (Ed.). *Farbatlas Ernährungsstörungen bei Kulturpflanzen*. VEB Gustav Fischer Verlag, Jena. 254 pp. 852 colour photographs, 214 tables. Price DM 58.

Phytopathologists, when confronted with books on mineral disorders will focus their interest mainly on two aspects: the outer appearance of the affected plants as contrasted to the appearance of certain pathogen infections and the effect of mineral disorders on resistance against pathogen infection. Both aspects are duly considered in the first of the two books edited by W. Bergmann. This book consists of a text part (319 pages) and of 852 high quality coloured photographs illustrating nutrient disorders of several plant species.

Non-German readers will possibly prefer the second book which is a short version of the first one, containing solely the colour plates with short explanations written in German, English and Russian. In these plates, agricultural crops, vegetables, ornamentals, fruit and forest trees of both the temperate and subtropical zones are equally considered. Besides deficiencies of the essential macro- and micronutrients, excess symptoms of environmental contaminants such as cadmium, chromium, lead, and mercury are included as well as typical immission damages such as those caused by fluor, HCl, SO₂ and NH₃. Most attention, however, is paid to nutrient deficiencies. The user will profit of the numerous combinations of crops and the deficiencies of the particular nutrients shown in the book. However, he should realize that it is nearly impossible to identify an existing deficiency just by comparison with pictures. The value of the Farbatlas will depend therefore on the experience and expertise of its user.

All problems involved in the use of these plates in the field are thoroughly discussed in the (German) text of the complete book. The text part contains a short general introduction, followed by a chapter on the appearance and diagnosis of nutrient-dependent damage symptoms in crops. Two further chapters deal with the mineral nutrition of crops in relation to resistance against pathogens and pests, and with the development of the deficiency and excess symptoms of the specific nutrients. The text part is completed by a table with sufficiency levels of nutrients in different crops and by a key for the determinations of nutrient deficiencies in agricultural crops.

In total, the text part represents a comprehensive treatment of mineral disorders. Some 1000 updated citations from all over the world are included and besides pure symptom descriptions, aspects of agronomy, soil fertility, plant anatomy and physiology, phytopathology and biochemistry have been considered.

Perhaps due to the great amount of data collected, the compilation does not always appear to be very critical. As a striking example, in a table on p. 176 tomato is listed among chloride-sensitive plants whereas on the following page it appears in another table amongst the chloride-tolerant species. On p. 96 some obsolete biochemical terminology is used, apparently directly copied from the older literature.

However, these are minor shortcomings. In general, the first book and, to a lesser degree, the Farbatlas will serve its purpose as a book of reference on mineral disorders in crops.

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