

Book review

Compendium of bean diseases – 2nd Edition. Howard F. Schwartz, James R. Steadman, Robert Hall and Robert L. Forster. 2005. 109 pp. APS Press, St. Paul, Minnesota, USA. ISBN 0890543283. US\$ 55.00.

The plant disease compendia of the American Phytopathological Society are an important service to the scientific and lay community working with plant diseases with a world-wide distribution and few comparable publications in other languages. The second edition of the Compendium of Bean Diseases provides a much appreciated update and expansion after 14 years with the aim of providing an international overview over biotic and abiotic diseases of *Phaseolus* beans.

Beans (*Phaseolus vulgaris*) have been cultivated by humans for over 7000 years and thus belong to one of the oldest crops and still provide one of the most important sources of protein to many people in Africa, Asia and Latin America. Therefore, the international scope of the compendium is of great importance. The long cropping history of beans has also allowed for the evolution of a great diversity of pathogens especially among the fungi and viruses with many pathogens causing similar symptoms; this makes the diagnostics of disorders a great challenge not only to the generalists but also to the specialists.

The introduction of the book gives a short but thorough overview of the history, botany and taxonomy of the crop, followed by definitions of the growth stages as well as a quick general overview of the different pathogen groups and other causes of diseases. Especially useful are the practical diagnostic and sampling guidelines for the general practitioner. In most parts of the world beans are not or only little fertilised and are the part in the cropping system that maintains or even increases the nitrogen content of the soil due to the symbiotic interaction with Rhizobia. However, this important issue is missing in the general introduction and only mentioned in Part II in the section on nitrogen deficiencies.

In Part I, a total of 73 infectious diseases are covered, caused by 32 fungal, five bacterial, six nematode, 26 virus, and four phytoplasma pathogens. It is especially interesting to read about the large number of virus diseases. Many of these were discovered only in the second half of the 20th century and appear to be related to changes in plant production systems and the introduction and establishment of new insect populations, especially white flies in many areas.

While the kind and amount of information available on the different diseases obviously varies, a more consistent format of the different disease descriptions might have been helpful; aimed at providing as fully as possible information on the world-wide disease distribution of the host range and specialisation of the pathogens, and the possible importance of the disease in terms of yield and/or quality losses. Almost no information about the situation in Asia and little about Africa and Europe is included in the book while Latin America is much more in focus. Sometimes there is mention that susceptible weeds should be removed but these are not specified leaving the reader at a loss. With respect to the presentation of the fungi, information on the classification is rather sporadic. While this is not always important in detail it usually is of use to know at least to which fungal class a pathogen belongs. A surprise is the mentioning on several occasions of methyl bromide as a pesticide of potential use, as this compound is by now banned in most of the world and should not have been included in the lists.

The most difficult diseases to diagnose are likely to be those caused by viruses; these often appear similar but at the same time are very variable in appearance. Considering that in many parts of the world diagnostic tools are limited it might have been of value to add a table summarising these different viruses and some diagnostic symptoms in beans and indicative alternate hosts to give some more detailed diagnostic guidelines to the reader.

Twelve disorders caused by environmental stress, an overview of mineral deficiencies and toxicities, and three seed quality disorders are

described in Part II. The interactions of stresses (especially low phosphorus supply and high pH) with proper nodulation and nitrogen fixation ability as an important factor for improving plant health should have been included in this section.

The glossary is an important part of the book as it helps non-specialists but also non-native English speakers to better understand the sometimes extremely specialised language that is necessary to unambiguously describe pathogen structures.

Overall, the book is very attractive to the reader because of the broad range of diseases covered.

The inclusion of the colour photographs throughout the volume rather than as a collection of plates as in older disease compendia makes the book even more readable.

MARIA R. FINCKH
Ecological Plant Protection
Faculty of Organic Agricultural Sciences
University of Kassel
Nordbahnhofstr. 1a
D-37213 Witzenhausen
Germany