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BOOK REVIEW

ROBINSON, R. A.: *Plant Pathosystems*. Advanced Series in Agricultural Sciences. Vol. 3. — Springer Verlag, Berlin—Heidelberg—New York 1976. 184 pp. Cloth DM 48,00.

The book *Plant Pathosystems* by R. A. Robinson is a theoretical study on the dynamic relations between crops and their pathogens. The philosophical approach of the author leans heavily on the theories of J. E. van der Plank who developed new epidemiological concepts of disease resistance in plants. Earlier studies by R. A. Robinson on the classification of horizontal and vertical resistance and the relevant terminology was very appreciated in the period when plant breeders and plant pathologists focused their attention on the long-lasting resistance. The new book by R. A. Robinson develops and completes theoretical studies and conclusions of his previous publications. It presents a new approach to the problems of crop loss due to parasites. The book is written in a brilliant clear style with logical succession of thoughts. This will be particularly appreciated by the readers who are not yet familiar with the topic.

The author starts his book with a general explanation of the systems concept (chapter 1) and continues with the description of the plant pathosystems (chapter 2). The following two chapters (3 and 4) are dealing with vertical resistance including the application of this type of resistance in the plant breeding. Some 70 years of scientific breeding for disease resistance have been dominated by vertical resistance; results were encouraging in the beginning but later largely disappointing (boom-and-bust). Therefore another type of resistance has to be stressed in the breeding for disease resistance: horizontal resistance (described in chapters 4 and 5). Author's attention is concentrated on horizontal resistance. He explains why it is universal and permanent, how it can be demonstrated and measured and how to assess its value in the agriculture. Examples of horizontal resistance are given in various crops particularly in maize, sugar cane and several long-term perennial crops. In several annual crops (bean, potatoes, wheat) the methods of resistance breeding are described. Comments on these methods will be appreciated particularly by plant breeders. Chapter 7 presents the concept of polyphyletic pathosystems. These systems comprise plants and pathogens of multiple origin. Crop vulnerability (chapter 8) is defined as susceptibility in the absence of an epidemiologically competent parasite or pathotype. Categories of vulnerability, assessment of vulnerability and reduction of crop vulnerability are described in this chapter. In the conclusions (chapter 9) the system concept and breeding strategies aiming at horizontal resistance are evaluated. The last chapter (10) reviews terminology applied in the book.

R. A. Robinson writes in the preface that the book is theoretical and speculative. Therefore, some conclusions may seem controversial to the practitioners working in this field. However, the book cannot fail to stimulate plant breeders, plant pathologists and agronomists in their effort to find new progressive methods for the crop protection against plant diseases and pests. Importance of breeding for resistance was stressed by a new International Programme on Horizontal Resistance launched by the Food and Agriculture Organisation of the United Nations, where the author is employed.

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