BOOK REVIEW

Datnoff L.E., Elmer W.H., Huber D.M. (Eds.). 2007. Mineral Nutrition and Plant Disease. APS Press – The American Phytopathological Society, St. Paul, Minnesota, U.S.A. 278 pp. ISBN 978-0-89054-346-7.

The researchers Carl Sprengel (1787–1859), Justus von Liebig (1803–1873) and Jean-Baptiste Boussingault (1802–1887) are regarded as the founders of agricultural chemistry in respect to the use of chemical fertilizers and chemical plant protection means. Since the publication of a book titled "Soilborne Plant Pathogens: Management of Disease with Micro- and Microelements" edited by Art Engelhard in 1989 the knowledge on that topic has greatly advanced and the reviewed book summarizes the progress made in this area and points the new goals for research.

As indicated in the "Preface" (p. iii) nowadays the mineral elements are routinely used to increase crop yields and to improve the overall plant health and crop quality. In eighteen chapters the authors present the benefits of use of each mineral nutrient along with the interaction of these nutrients for improved crop production efficiency, plant health and a sustainable ecosystem.

The book begins with two general and very informative chapters: Chapter 1 – "The Chemistry of Plant Nutrients in Soil" by S.H. Daroub and G.H. Snyder (p. 1–7) and Chapter 2 – "The physiological Role of Minerals in the Plant" by R.W. Rice (p. 9–29).

The next following sixteen chapters refer to specific physiological role of each element in the plant health: Chapter 3 – "Nitrogen and Plant Disease" by D.M. Huber and I. A. Thompson (p. 31–44). Chapter 4 – "Phosphorus and Plant Disease" by A. S. Prabhu, N.K. Fageria, R.F. Berni, F.A. Rodrigues (p. 45–55). Chapter 5 – "Potassium and Plant Disease" by A. S. Prahbu, N.K. Fageria, D.M. Huber, F.A. Rodrigues (p. 57–78). Chapter 6 – "Calcium and Plant Disease" by M. Rahman and Z.K. Punja (p. 79–93). Chapter 7 – "Magnesium and Plant Disease" by J.J. Jones and D.M. Huber (p. 95–109). Chapter 8 – "Sulfur and Plant Disease" by S. Haneklaus, E. Bloem and E. Schnug (p. 101–118). Chapter 9 – "Iron and Plant Disease" by D. Expert (119–137). Chapter 10 – "Manganese and Plant Disease" by I.A. Thompson and D.M. Huber (p. 139–153). Chapter 11 – "Zinc and Plant Disease" by B. Duffy (p. 155–175). Chapter 12 – "Copper and Plant Disease" by I. Evans, E. Solberg and D.M. Huber (p. 177–188). Chapter 13 – "Chlorine and Plant Disease" by W.H. Elmer (p. 189–202). Chapter 14 – "Molybdenum Plant Disease" by R.D. Graham and J.C.R. Stangoulis (p. 203–214). Chapter 15 – "Boron and Plant Disease" by J.C.R. Stangoulis and R.D. Graham (p. 207–214). Chapter 16 –"Nickel and Plant Disease" by B.W. Wood and C.C. Reilly (p. 215–231). Chapter 17 – "Silicon and Plant Disease" by L.E. Datnoff, F.A. Rodrigues and K.W. Seebold (p. 233–246). Chapter18 –"Aluminum and Plant Disease" by H.D. Shew, E. J. Fichtner and D.M. Benson (p. 247–264).

Each chapter describes the critical levels of each specific element involved in plant disease interactions, the effects of these elements on pathogens and host plants, and the known mechanisms of how these elements suppress plant noninfectious and infectious diseases. Such information allows to use properly the appropriate fertilizers for the maintenance of healthy crop and receiving high yields.

The huge number of pertinent references provided at each chapter as well as good Index (p. 265–278) enables the interested reader to find appropriate and needed information.

Without any doubt this book will serve as an excellent source of useful information for plant physiologists, agronomists and plant protection specialists as well as for university teachers and students. Therefore I strongly recommend this book for all agricultural and natural sciences libraries.

Jerzy J. Lipa
Dep. of Biological Control and Quarantine, Institute of Plant Protection – National Research Institute
Władysława Węgorka 20, 60-318 Poznan, Poland, J.J.Lipa@ior.poznan.pl

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