Book Reviews

Mineral Nutrition of Crops: Fundamental Mechanisms and Implications. 1999. Zdenko Rengel (ed.). Haworth Herbal Press, 10 Alice Street, Binghamton, NY 13094. 400 p. Tables, figures, and numerous chemical equations. \$149.95, hardcover (ISBN 1-56022-880-6); \$59.95, softcover (ISBN 1-56022-900-4).

This book would make a good supporting reference to the traditional books on mineral nutrition, such as the books authored by K. Mengel and E.A. Kirkby, or H. Marschner. The 12 chapters cover an incredibly broad range of topics.

Chapter 1: Biology and Chemistry of Nutrient Availability in the Rhizosphere

Chapter 2: Kinetics of Nutrient Uptake by Plant Cells

Chapter 3: Molecular Biology of Nutrient Transporters in Plant Membranes

Chapter 4: Long-Distance Nutrient Transport in Plants and Movement into Developing Grains

Chapter 5: The Significance of Root Size for Plant Nutrition Intensive Horticulture

Chapter 6: Role of Mineral Nutrients in Photosynthesis and Yield Formation

Chapter 7: The Role of Nutrition in Crop Resistance and Tolerance to Diseases

Chapter 8: Importance of Seed Mineral Nutrient Reserves in Crop Growth and Development

Chapter 9: Physiological Mechanisms Underlying Differential Nutrient Efficiency of Crop Genotypes

Chapter 10: Breeding Crops for Improved Nutrient Efficiency: Soybean and Wheat as Case Studies

Chapter 11: Monitoring Water and Nutrient Fluxes down the Profile: Closing the Nutrient Budget

Chapter 12: Mechanistic Simulation Models for a Better Understanding of Nutrient Uptake from Soil

Many of these topics are not traditionally covered in mineral nutrition books. Fifteen authors, representing an eclectic mix from around the world, contributed to the 12 chapters. Each chapter taps the expertise of different individuals. This is one of the strengths of the book, as the authors are often writing about topics in which they have invested years of research. What is considered commonplace and routine in your part of the world may be new information elsewhere. Science fiction writer William Gibson's comment that: "The future is here. It is just not evenly distributed yet" is very true.

However, having multiple authors, a strength of the book, is also one of its weaknesses, as the writing style, effectiveness, and quality varies by author. Readers must adjust their approach to each chapter.

Each chapter has adequate illustrations, graphs, and tables highlighting data that are discussed in the text. It is often the author's research, so they are very qualified to discuss and explain its meaning.

The discussion in each chapter is usually excellent. The authors are also good about raising excellent questions, particularly if current research does not provide an adequate answer. Many of the chapters also provide excellent information on various techniques that might be used to address a particular research objective. The pros and cons of each technique are often discussed adequately. Each chapter is also provided with an extensive list of references. Unfortunately, this book was published in 1999, so the newest references are from 1996 to 1997.

This book would make an excellent reference for researchers involved with mineral nutrition research. It would also be of value to those researchers in other fields, such as genetics, production, physiology, plant pathology, and entomology, as a guide to how mineral nutrition might impact their research. The book lists on Amazon.com for \$59.95 plus shipping.

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