BOOK REVIEW

Soil Fertility and Fertilizer, 2nd Edition


This book is the second edition of a widely used and well-respected text of the same name and the same authors. In the preface the authors explain that "The purpose of the second edition of Soil Fertility and Fertilizers is the same as that of the first: to present some of the fundamental concepts of soil fertility and fertilizer manufacture and use in a manner suitable for students of agriculture at the junior and senior levels in college. Like the first edition, this text will be of greatest value to those who have completed a fairly comprehensive beginning course in soils."

Few authors are better qualified by experience and background to write on this subject. Dr. Tisdale is Director of Agricultural Research, The Sulfur Institute. Dr. Nelson is Midwest Director, American Potash Institute and Regional Director, Foundation of International Potash Research. Both authors are former professors at North Carolina State College and taught courses in soil fertility. Their present positions place these men in strategic situations to learn about developments in the fertilizer industry and about research in soil fertility. Both men are widely acquainted with research and extension workers and practicing agronomists. Both have lectured, studied, and consulted in many parts of the world about fertilizers and soil fertility problems, and are well aware of the massive contribution that the science of fertilizers and soil fertility makes to modern agriculture.

Original research papers and technical monographs are major sources of information in this book. Trade journals and technical bulletins are often cited. Pictures and charts are frequently used to illustrate topics. Sometimes these illustrations are taken from teaching and extension materials, but as would be expected, many are supplied by the American Potash Institute which has furnished many visuals on subjects in soil fertility.

The edition is more than 50% larger than the first. A few chapters have not been changed but several others have been expanded and reorganized. Instead of one chapter on Soil Nitrogen and another chapter on Fertilizer Nitrogen, the new edition has a single chapter on Soil and Fertilizer Nitrogen with more pages than the two separate chapters added together. The same is true for phosphorus and for the cations, potassium, magnesium and calcium. Perhaps the authors adopted this organization because soil fertility in our agriculture is more a summation of fertilizer applications than a natural property of the soil.

Descriptions of manufacturing and mining processes are rather brief as is the discussion of sources and reserves of potash minerals and phosphate rock. This change may have been made partly because these subjects are covered adequately by other books or partly because the intended audience is not greatly interested in the chemistry, geology, technology and history behind the fertilizer industry. Space that has been saved, and more, is devoted to the introduction of new topics and to the reactions of fertilizers in soils.

This book will serve well the students of agriculture who wish more information about fertilizers and soil fertility than can be included in "a fairly comprehensive beginning soils course."

It will also be helpful to dealers, sales and technical service personnel, and others associated with the fertilizer industry. The presentation of this additional information also assumes about the same subject-matter background as a beginning course in soils. This book is not, I believe, specifically intended for students with a strong background in the physical and biological sciences.

Chapter 4, Basic Soil Plant Relationships, covers in 14 pages cation exchange (including a discussion of clay minerals), base saturation, CEC, anion exchange, contact exchange, root cation-exchange capacities, plant availability of cations, and ion absorption by plants.

The book is attractive and readable. At the end of each chapter is a summary, a list of questions for study, and a large number of selected references. The index appears to be complete and detailed.—L. T. KURTZ, Department of Agronomy, University of Illinois, Urbana, Ill.