SOIL FERTILITY


From a long and distinguished career in the soil science department of Michigan State University, the author draws on his wide knowledge to give unusually wide coverage to the subject of soil fertility in this book. From the "plant's point of view," soil chemistry, physics and microbiology are discussed along with their relationships to plant physiology. Each of the major nutrients and the more important trace elements are discussed with respect to their supply in the soil, sources and amounts of additions, losses from the soils, their functions in plant growth, and deficiency symptoms.

Aspects considered in separate chapters are soil solution and nutrient absorption by plants, colloids and soil productivity, pH and liming, organic matter, soil deficiencies and methods for determining nutrient needs of crops, activities of soil organisms, use of green manures, crop residues, and composts, contributions of commercial fertilizers to soil productivity, and rotations and cropping systems in different sections of the United States. Problems of saline soils and irrigation are not overlooked. Of especial value to the student is the attention given to field trials, particularly the classical experiments.

GRASSLAND FARMING


The principles and practices of grassland farming are now quite firmly implanted and fostered throughout the segment of agriculture devoted to animal production. The clearly written book deals with the several active farm operations in grassland farming. It is written primarily for high school students, but the authors also keep the actual farm operator in mind. There are 12 chapters on the following topics: growing grassland crops, using forage in livestock feeding, growing forage for profit, selecting legumes, selecting grasses, choosing seed and establishing seedlings, adding lime and fertilizer, managing pastures, managing hay crops, preserving forage, conservation cropping, and equipping the grassland farm.

The contents of the chapter on using forage in livestock feeding indicates the thorough treatment characteristic of the entire book; this chapter discusses feed sources, price relationships, feeding problems of dairy cattle, beef cattle, sheep, lambs, hogs, and poultry, forage capacity of livestock, forage composition as to proteins, energy, minerals, vitamins and moisture, and total digestible nutrients. Although the selected reading, questions and suggested activities listed after each chapter are primarily for the teacher and student, attention to them by the general farm reader will help find answers to many every-day problems in grassland farming.

CHEMISTRY OF THE SOIL


Thirteen soil scientists have contributed to this book which is Monograph 126 of the American Chemical Society. The book, dealing with the chemistry, cation and anion exchange, organic matter, nutrient fixation, oxidation-reduction, soil reaction, trace elements, and plant nutrition. Contributors are THOMAS H. KIRK LAWTON, EDWARD H. STONE, IVAN WILKINSON, JOSEPH W. LLOYD, RICHARD W. FRANCIS, CHARLES T. SEDGWICK, WILLIAM M. H. WILLIAMS, MARVIN L. JAMES, THOMAS R. MURPHY, H. B. WICKLANDER (Sweden), and ARTHUR L. PRINCE. Each work is devoted to the subject of soil chemistry thus far published. There are also several active farm operations in grassland farming. It is

THE GENUS NICOTIANA AND EVOLUTION OF THEIR PSEUDOMORPHS


This book is a monographic study of over 200 species of Nicotiana. The author has made many observations on living plants of 56 of the 60 species treated and a comparison of these with the herbarium material at the Missouri Botanical Garden, Missouri Academy of Science, University of Missouri, and other libraries, will help find answers to many every-day problems in grassland farming.

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