

New Books

Soil-Plant Relationships

C. A. BLACK, John Wiley & Sons, Inc., New York. 1957. 332 pages. Reviewed by G. L. TERMAN, Tennessee Valley Authority, Wilson Dam, Ala.

WITH THE PRESENT EMPHASIS on more efficient crop production on fewer acres, increasing use of fertilizer is a major factor in its accomplishment. Efficient use of fertilizer, however, entails a thorough knowledge of plant nutrition and how plants obtain various nutrients from their environment. In the past the field of plant nutrition has usually been covered in plant physiology textbooks. Soils information has been presented in textbooks on soils. "Soil-Plant Relationships" is perhaps the first successful attempt in the United States to integrate these two fields fully, with emphasis on common crop plants. Many writers tend to oversimplify complex soil-plant relationships. Instead, Dr. Black often presents conflicting evidence and attempts to reconcile diverse views based on research findings.

Dr. Black's expansion of the outline of his college course (of the same title as the book) has resulted in an outstanding contribution for advanced students in agriculture, as well as professional workers in the field of soils and plant nutrition. An excellent job has been done in assembling up-to-date information in this rapidly evolving field. Most emphasis is placed on an over-all understanding of plant needs in relation to the soil environment in which they live. Little emphasis is placed upon the particular problems in a given soil or climatic area, or on technical details. Wide use of examples of various phenomena is made.

The soil in relation to plant growth is covered adequately in separate chapters on composition, water, aeration, exchangeable bases, acidity, and salinity and alkalinity. In additional chapters the three major fertilizer elements, nitrogen, phosphorus, and potassium, are discussed in detail as to their content in and reaction with soils, and their use by plants. Although the author has devoted much of his research to soil phosphorus, the book does not overemphasize this aspect of soil-plant research. Extensive literature lists for each chapter serve to guide the reader in further exploration of the subject matter.

Dr. Black does not treat the secondary and minor nutrient elements in

separate chapters. However, certain elements such as calcium, magnesium, sodium, and others, are treated briefly in the chapters on exchangeable bases and soil acidity.

LITERATURE AVAILABLE

Cottonseed Meal. Proceedings of the Fourth Conference on Processing as Related to Nutritive Value of Cottonseed Meals available from USDA's SOUTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIVISION, P.O. Box 7307, New Orleans 19, La.

Fertilizer Equipment. Valves and fittings, especially designed to handle liquid fertilizers, minimize hazards of solutions' spilling out of fill line. Products include quick couplers, nozzles, loading assemblies, and sight glass indicators. Made in aluminum, semi-steel, and stainless steel. Bull. F-31 may be obtained from Dept. A&F, JORDAN INDUSTRIAL SALES DIVISION OF OPW CORP., 6013 Wiehe Rd., Cincinnati 13, Ohio.

Formulations Handbooks. Three booklets, one on Phosdrin, one on methyl parathion, and one on aldrin, dieldrin, and endrin, give instructions on formulating, safe handling, analyzing, and labeling of these insecticides. Ask for handbooks SC:54-39 (on endrin, dieldrin, and aldrin), SC:57-47 (on methyl parathion), or SC:57-28 (on Phosdrin) from Dept. A&F, Agricultural Chemical Sales Division, SHELL CHEMICAL CORP., 460 Park Ave., New York 22, N. Y.

Gibberellins. Eighteen-page technical bulletin reviews up-to-the-minute research findings on uses of gibberellins. Contains bibliography of 188 pertinent scientific papers. Also available technical service use direction sheet describing "Gibrel" Seed Stimulant "88." Write Dept. A&F, MERCK & Co., CHEMICAL DIVISION, Rahway, N. J.

Material Handling Equipment. Descriptive and technical data on electric lift truck designed and built to be safely used in both Class I, Group D and Class II, Group G explosion hazardous areas. Bull. Index No. 04.00, Dept. A&F, REVOLVATOR Co., Tonnele Ave. at 86th St., North Bergen, N. J.

Nitrogen Generators. Bulletin contains illustrations of typical installations and description of simplified one-station control panel of self-contained packaged nitrogen generators. Charts of over-all dimensions, weights of all

standard sizes and operating costs included. Dept. A&F, GAS ATMOSPHERES, INC., 20011 West Lake Rd., Cleveland, Ohio.

Pellet Mills. Illustrated bulletin describes three new Series "C" California process pellet mills. Basic specifications and capacities, design, construction, and operating information included for each machine. Models range up to 100 hp. with capacities up to 15 or more tons per hr., depending on material, pellet size, and other variable factors. Request Bull. 5758, Dept. A&F, CALIFORNIA PELLET MILL Co., 1114 E. Wabash Ave., Crawfordsville, Ind.

Pesticide Data. Basic data are summarized in mimeographed bulletins on D-D soil fumigant; aldrin, dieldrin, and endrin; Phosdrin; allyl alcohol; Nemagon; and methyl parathion. Write Dept. A&F, Agricultural Chemical Sales Division, SHELL CHEMICAL CORP., 460 Park Ave., New York 22, N. Y.

Processing Equipment. Brochure gives mechanical descriptions and specifications of evaporators; drum, rotary, pan and vacuum dryers; flakers and cooling drums; spray dryers; autoclaves, quick-opening autoclave doors; processing kettles; pilot plant and laboratory equipment; Nauta mixers; gas cleaners; and special equipment for unusual processes. Write for Bull. #380, Dept. A&F, BUFLOVAK EQUIPMENT DIVISION, BLAW-KNOX Co., Buffalo, N. Y.

Safety. Three booklets on the safe handling of insecticides contain first aid information for physicians. Ask for SC:57-45 (on Phosdrin), SC:57-48 (on methyl parathion), or SC:55-13 (on endrin, dieldrin, and aldrin). Two data sheets (SC:57-69 for Phosdrin and SC:57-73 for methyl parathion) on the safe application of these insecticides are also available. Write Dept. A&F, Agricultural Chemical Sales Division, SHELL CHEMICAL CORP., 460 Park Ave., New York 22, N. Y.

Soil pH. Booklet entitled "What Every Plant Grower Should Know About Soil pH," written by agricultural consultant Robert E. Atkinson, has charts, graphs, and illustrations. Designed to help both professional and amateur growers achieve better lawns and bigger crop yields. May be obtained by writing Dept. A&F, BECKMAN SCIENTIFIC INSTRUMENTS DIVISION, Fullerton, Calif.