deviate, $t$, $z$, $X^2$ and interrelations of these), Significance of Single Observations, Sums, Differences and Means, Degrees of Freedom and the Analysis of Variance, Planning Experiments (factorial, control of Error, random block and latin square, Confounding), The Interrelations of Two Variables, Polynomial and Multiple Regressions, Correlation (both interclass and intraclass), The Analysis of Frequency Data ($X^2$ and the normal deviate, various forms of $X^2$, partitioning $X^2$, effect of fitting a parameter, heterogeniety, $2x_2$, $2x_j$, and general contingency tables), Estimation and Information (probability and likelihood, method of maximum likelihood, inefficient statistics, simultaneous estimation, combined estimation and heterogeniety tests, planning experiments, fiducial probability), and Some Transformations (angular and probit).

A glossary of terms, four tables ($c$, $t$, $X^2$, and variance ratio), and an index complete the volume.—F. Z. HARTZELL.

COMMERCIAL FERTILIZERS, THEIR SOURCES AND USE


This new edition contains 29 more figures, 29 more tables, and 42 more pages than the previous edition. In general, the new material represents advances in the fields of plant nutrition, fertilizer practices, and fertilizer manufacture in the period of 1941-46.

A new chapter discusses the manufacture and use of ammonium nitrate, while new sections have been added on such subjects as by-product sodium nitrate, loss of ammonia following applications of ammonium sulfate, use of urea in tobacco beds, and use of ammonium hydroxide as a fertilizer.

The chapters on superphosphates and potash have been revised, and new material has been introduced on such subjects as reversion of phosphates, metaphosphates, fixation of phosphate and potash, and new sources of potash.

Considerable new information on fertilizers carrying the “secondary essential elements”—sulfur, calcium, and magnesium—the “rarer essential elements”—iron, manganese, boron, copper, zinc, and molybdenum—and “the elements not accepted as essential for plant growth”—sodium, chlorine, silicon, aluminum, radium, and cobalt—has been added.

The sections on biological, plant-tissue, and rapid chemical tests for determining fertilizer needs of soils and crops have been expanded; as has the section on the fertilizing value of vitamins, hormones, and growth regulators.

The book contains an excellent bibliography of 606 references. Although it is considerably more valuable than the previous edition, it still contains such inaccuracies as the statement, “Firing under natural field conditions appears to be an injury resulting from drouth”.
—M. T. VITTMU