of a broad range of techniques with little delving into final analysis. Therefore, it will be most useful to those students and scientists who need instruction and introductory reference material to diverse methods, and who are looking for their own conclusions.—LYNNE CARPENTER-BOGGS, USDA-ARS, NCSCRL, 803 Iowa Ave., Morris, MN 56267 (lcboggs@mail.mn.ars.usda.gov).

Modern Agriculture and the Environment


In the past 50 years, agricultural production has dramatically increased in response to global population growth and a greater demand for grain and animal produce in more affluent developed countries. Agriculture has been able to increase production over this period due to a reduction in fertilizer costs, greater availability of specific fertilizer and pesticide formulation, and lower marketing costs. Overall, this has resulted in an increase in chemical inputs to modern agricultural systems. In the case of nutrients, inputs generally exceed outputs in crop and animal produce. These regional and national imbalances have led to a greater leakage of the chemicals to the environment, with a subsequent decline in the quality of soil, air, and water resources in some areas. As society, in general, has come to accept cheap food along with clean water and air, more attention is being directed to environmental quality degradation issues and the role of agriculture. As agricultural production and global markets have become more interdependent and complex, solutions to current environmental quality issues will not be simple. Thus, a great deal of research has been directed toward providing answers to these issues in the last decade. This book addresses these issues.

This book contains the proceedings of the First International Rehovot Conference on Modern Agriculture and the Environment, held at the Rehovot Campus of the Faculty of Agriculture, the Hebrew University of Jerusalem, Israel, on 2–6 Oct. 1994. The book is divided into nine sections, which address current problems and possible solutions to the complex interaction between modern agriculture and the environment. Section 1 discusses chemical pesticides, means to reduce their use, and some of the main alternatives to their overuse and misuse in pest management; Section 2 deals with chemical fertilizers and how to minimize pollution associated with their use; Section 3 addresses some of the environmental aspects of aquaculture; Section 4 presents approaches to the modeling of agricultural production; Section 5 covers the treatment of wastewater and its utilization in irrigation; Section 6 deals with the recycling of municipal and agricultural wastes; Section 7 presents pollution problems caused by heavy metal, and some means for their mitigation; Section 8 is devoted to bio-remediation of agricultural pollutants; and Section 9 presents discussions of economic and policy aspects of natural resources.

Each section of the book contains a keynote paper and several technical reports that were selected by the editors from presentations made at the conference. Each contribution has been peer-reviewed, and the editors have done an excellent job in collating the papers. All papers follow a common formatting scheme for tables, figures, and reference citations. The Publishers are also to be commended on the quality and uniformity of type-style of all of the papers.

Clearly, the scope of this book is very broad and encompasses most issues concerning agricultural production and the environment today. Herein lies the main strength and weakness of the book. Although it attempts to address many issues, and keynote papers are excellent, some of the other papers tend to be narrowly focused. A book could have been written on any one section alone. Thus, there is much important and relevant information not presented in the book. Although no reflection on the editors or contributors, the high cost of the book will limit its readership and impact on the scientific and policy-making community.

The book contains information that will be of value as a general reference to researchers and graduate students, as well as policy makers involved in agricultural production and environmental quality issues.—ANDREW N. SHARPLEY, USDA-ARS, Pasture Systems and Watershed Management Research Laboratory, University Park, PA 16802-3702 (ans3@psu.edu).