In the second edition of Biological Control of Plant-Parasitic Nematodes: Soil Ecosystem Management in Sustainable Agriculture, Graham Stirling has done an outstanding job of clarifying a previously nebulous area of nematology. However, as the title indicates, it focuses on the more general concept of soil ecosystem management in sustainable agriculture. This book will be of value to everyone working in soil science, soil ecology, agronomy, and sustainable agriculture. A major strength of the book is that it addresses the failure of many sustainable agriculture programs to recognize the importance of soilborne pathogens as a component of the soil ecosystem.

The author has developed a highly readable account of the amazing complexity of the soil environment, of the role of biotic and abiotic factors in this environment, and of ecosystem effects on the performance of crops. This book will not only bring you up to speed on current knowledge, but will take you beyond esoteric classroom theories to actual field experiences in implementation of sustainable agriculture in the presence of soilborne pathogens.

The author approaches the subject from a diverse research background gained from working on a variety of crops across a research spectrum ranging from public universities, to government agencies, to private endeavors. Stirling integrates his more than 35 years of basic and applied agricultural experience, with data from over 1,500 references, to present a holistic approach to sustainable management of agricultural ecosystems. These 1,500 references are not merely cited in the book, but are analyzed, integrated, and put into perspective in a highly readable overview. A recurring theme in the book is that agricultural research must be relevant to agricultural practitioners. In addition to the extensive reference list, the book is very well indexed both by subject, and by genus and species of soil organisms.

The book is composed of 14 chapters divided into six sections: I. Setting the Scene; II. The Soil Environment, Soil Ecology, Soil Health, and Sustainable Agriculture; III. Natural Enemies of Nematodes; IV. Plant-microbial Symbiontnematode Interactions; V. Natural Suppression and Inundative Biological Control; and VI. Summary, Conclusions, Practical Guidelines and Future Research. Although the title is similar to the 1991 edition, this book is not merely a rewritten edition. In the second addition, the author has widened the focus to the broader context of the soilborne pathogens as components of the soil ecosystem.

Section I is a broad, yet brief, 13-page introduction to the scene for viewing soil biology and sustainable agriculture, an ecological perspective; and transferring ecological knowledge into practical outcomes. It also introduces the concept of soil biology management ‘which is defined as building and diverse soil biological community that will not only . . . pests but also improve the soil’s physical properties, ecological nutrient cycling and provide the many other services provided by the soil biota” (Stirling, 2014, p. 9). Section II delves into details on the ecology of the soil environment, soil–root interface, and of the soil food web; and how impact global food security, soil health and sustainable agriculture. Section III (123 pages) discusses the parasites and predators of plant-parasitic nematodes. Section IV (29 pages) reviews the role of arbuscular mycorrhizal fungi, endophytic fungi, bacteria, and phytophages, and plant growth-promoting rhizobacteria in the ecosystem. Section V (138 pages) delves into the topic of soilborne pathogens with organic amendments and natural soil biology management’ which is defined as building a diverse soil biological community that will not only suppress . . . pests but also improve the soil’s physical properties, ecological nutrient cycling and provide the many other services provided by the soil biota” (Stirling, 2014, p. 9). Section II delves into details on the ecology of the soil environment, soil–root interface, and of the soil food web; and how impact global food security, soil health and sustainable agriculture. Section III (123 pages) discusses the parasites and predators of plant-parasitic nematodes. Section IV (29 pages) reviews the role of arbuscular mycorrhizal fungi, endophytic fungi, bacteria, and phytophages, and plant growth-promoting rhizobacteria in the ecosystem. Section V (138 pages) delves into the topic of soilborne pathogens with organic amendments and natural soil biology management’. Section VI (35 pages) provides a practical guide to improving soil health and enhancing soil health to soilborne pathogens, and summarizes recommendations for future research needs.

Like other science texts, the book is expensive, but the coverage of soil ecology, and readability, should make it a valuable addition to the bookshelves of a broad range of users.

In addition to hard cover, the book is also available in Google Play editions, placing a wealth of information literally at your fingertips.

REFERENCES