BOOK REVIEWS

New Books Received


Biodiversity and Pest Management in Agroecosystems

After decades of extensive agricultural activities, we now understand that biodiversity plays an important role in agroecosystems, and complex systems are more sustainable in terms of production and resource conservation than simple systems. The book is well organized into nine chapters with a separate introduction and conclusion. The first two chapters establish the ecological and biological principles and case studies in later chapters. Starting with an introduction, the authors review the role of biodiversity, characteristics of the agricultural landscape, pest buildup, and interactions with biological control. With such diverse topics in a complex system, I found the bulleted text and many figures provided by authors helpful for understanding the relationships and interactions.

Chapter 3 can be seen as a connection between the first and the second part of this book. In this chapter, the authors present several theories explaining the relationships between biodiversity, stability and plant diversity, including “monophagous pests,” “associated resistance,” the “resource hypothesis,” “resource concentration,” and others. Given the limitations of real situations, comparatively, major hypotheses and criticisms concerning theories are discussed, which makes it one of the most appealing chapters of this book.

The second part of this book, Chapters 4 to 7, examine the specific examples of biological and alternative management in different cropping systems using case studies. Chapters 4 to 7 examine the effects of weed management on cover crops, and crop-field border vegetation on pest population density and damage. Chapters 8 focuses on combinations of crops with trees, extending the diversity to agroforestry systems. Chapter 9 is resource-poor farmers in Latin America and the agrarian structure of California, the case studies in these chapters are all different and site specific. But they are certain underlining mechanisms and relationships between plants, herbivores, and natural enemies, which provide keys to the successful designs. For researchers entering the field of biological control and crop systems, the book is a good place to start for graduate students focusing on principles involved in pest management.

I believe that it was the authors’ many years of experience in the field that has made this book a success and a valuable resource for anyone interested in agroecosystems and biological control.

The development of biological control through searching for information about crops and pests and their interactions is a valuable tool in the modern agricultural system. The book provides a guide to successful cases in this book are especially encouraging for extension agents to assist their research and educational activities.