inequalities, and in a time when few seem concerned, remains one of humanity’s greatest challenges.”


The primary audience for this book is the soybean producer in the midsouthern region of the USA. But, its appeal will be much broader. Written as a comprehensive resource for producers, it should also be a useful reference for crop advisers, agronomy students, and anyone else interested in efficient soybean production. The applicable geographical region is probably broader than one would infer from the title. Some chapters are region specific, but producers from much of the USA could gain important insights from many of the topics discussed in this text.

The book opens with a chapter on economics, which establishes an appropriate focus for the rest of the text. Unfortunately, this chapter is written too narrowly with nearly all data coming from a single state, Mississippi. Soil erosion is discussed in the second chapter. This topic is a wise choice for an introductory chapter. Nearly all soybean producers should be concerned about soil erosion, and cropping system choices should relate to both economics and their effect on soil. Chapters 3, 4, and 6 through 11 are about one or more aspects of crop management. Topics covered include variety selection, planting date, row spacing, seeding rate, nutrient management, tillage, irrigation, double-cropping, and crop rotation. Two relatively new approaches to these agronomic practices are early soybean production system (ESP's) and stale seedbed. A full chapter is devoted to each of these two topics. Mycorrhizae are discussed in Chapter 5. Although an important aspect of soybean growth and often overlooked, a full chapter on mycorrhizae may contain too much detail. Various categories of pest management are covered in Chapters 12, 14, 15, and 16. Chapter 13, a chapter about seed quality, appears to be out of order and would be better discussed after the pest management series of chapters. Chapter 17 covers statistics. This discussion is quite thorough and contains formulas and details that are more than a casual reader requires. The next chapter goes into great detail about water movement in plants. Although some understanding of the material discussed in this chapter may be beneficial to producers, the detailed contain herein is probably beyond the appropriate scope of this text. The book ends with a chapter on crop models. This discussion is an excellent method of integrating the topics covered in the rest of the text.


This book is based on a workshop held at Utrecht University, the Netherlands, in June 1997. Objectives of the workshop were examining the physiological mechanisms that account for differences in relative growth rate between plant species and the ecological consequences to adaptation of these differences. The organizers of the workshop and the editors are to be complimented for the fact that virtually all of the book focus on these themes. Several chapters discuss these themes at an advanced level and include reviews, theoretical analyses, and conceptual hypotheses using old and some new data sets.

The book begins with an introduction by J. Pritchard. It provides a discussion of the objectives of the workshop and an outline of the various chapter topics. The book is divided into four sections. In the first section, “Anatomy of Roots and Leaves,” there is a current discussion of possible relations between cell division and growth. J. Farrar and S. Gunn. They propose that plants may regulate cell division and growth by J. Pritchard in which he examines the possible dual role of the proportion of cells in a tissue that are rapidly dividing and not rate of cell division per se. Another notable section involves a discussion of the control of root growth by J. Pritchard in which he examines the possible dual role of turgor pressure in both cell expansion and root growth. He points out the importance of cell wall properties in mediating cell expansion and discusses associations between solute flux and root growth.

The second section on "Carbon Metabolism and Resource Acquisition" begins with a powerful synthetic analysis by J. Evans of the photosynthetic characteristics of fast- and slow-growing species. His analysis points out that a correlation between relative growth rate and net assimilation rate does not necessarily mean that photosynthetic capacity (rubisco levels) per unit leaf area, proportion of leaf mass in mesophyll cells versus that of the vascular and sclerenchymatous cells may be partitioned with relative growth rates. Another powerful chapter is provided in a discussion of carbohydrate partitioning by J. Farrar and S. Gunn. They point out how photosynthetic measurements probably should be used when determining whether differences in partitioning of carbohydrates between shoots and roots. They conclude that "If plants regularly