People + Appropriate Organizational Changes + Strategic Thinking, where “shared purpose” is defined as Vision + Communication. Considering that 21st Century leaders will face increasing complexity, uncertainty, and extremely challenging problems, selection and development of visionary leaders must be done with great care and definite plans for transition. In summary, since “there is no more powerful engine driving an organization toward excellence and long-range success than an attractive, worthwhile, and achievable vision of the future, widely shared”, this book should be required reading for anyone who is or aspires to be a leader.

Douglas L. Karlen
USDA-Agricultural Research Service,
National Soil Tilth Laboratory,
2150 Pammel Drive,
Ames, IA 50011-4420
(karlen@nstl.gov)


Wheat (Triticum spp.) science is changing rapidly, and the world’s most important crop deserves a compilation of recent research advances. The latest treatise, the ASA–CSSA–SSSA monograph Wheat and Wheat Improvement, is already 13 yr old. Purported barriers to yield improvement of wheat in some regions, scientific progress in many areas, and steady gains in world population easily justify an update.

Recent literature on field ecology and physiology and their application to improvement of wheat are reviewed. Four sections, “Wheat Physiology”, “Wheat Ecology”, “Wheat Production Systems”, and “Breeding to Further Raise Wheat Yields”, indicate the scope of the book. Each section contains four to six chapters by distinguished authors.

The first section discusses the development of the wheat plant, yield components, N nutrition, and grain quality and their importance in wheat improvement. Wheat plant development is considered in terms of the major phases and their interactions with environmental effects. All the yield components are described, and kernel number, the major determinant of yield, is emphasized. The chapter on N outlines assimilation of the nutrient, its relationship to plant growth, and genetic improvement of fertilizer use. The present understanding of grain quality and factors that affect it are well summarized.

“Wheat Ecology” includes chapters on planting date; plant density; the effects of weeds, insects, and diseases; and poly culture of wheat. Planting date studies in England and Australia are emphasized. The chapter on plant density considers effects on dry matter and grain yield and interactions with limiting resources. The chapters on pests of wheat review the most common problems, their effects on grain yield and quality, and interactions with other factors. Intercropping of wheat with other species and blends of cultivars are discussed in the chapter on poly culture.

Wheat production systems are described for the Great Plains, Australia, Mediterranean regions, and the Pampas. The chapter on Great Plains wheat emphasizes soil fertility but does not cover spring wheat in the Northern Plains and Canada. Wheat in Australia and the Pampas—the climate; constraints; and production, research, and extension systems—is described well. Wheat production in Mediterranean regions is discussed mostly from the perspective of fundamental water relations.

The section on breeding to raise wheat yields reviews physiological traits, hybrid wheat, and biotechnology applications. The first chapters describe genetic gain in physiological traits associated with yield increases in the past and identify traits that may be important in the future. The other chapters discuss the potential for hybrid wheat in low-rainfall areas and biotechnologies of molecular maps, introgression of alien genes, traits.

Readers might quibble with some of the contents, or lack thereof, of the book. Several chapters are parochial, emphasizing the authors’ regions or specialities when broader coverage is needed. Wheat in the world’s most important wheat-producing countries, China, India, and the former USSR, is hardly mentioned. Tremendous changes in these countries have important lessons for other regions. Most wheat is grown in stressful environments (average world yield is about 2.5 Mg ha−1), and more attention might have been given to cold, drought, heat, acidic soils, and other adversities. The only chapter that directly addresses the problem focuses on hybrid wheat, a questionable solution. Then, like in all texts, there are a few mistakes. “Vona”, for instance, was not the first semi-dwarf hard red winter wheat cultivar released in the USA.

A single volume cannot encompass all of wheat science, however, and the strengths of this book greatly outweigh any deficiencies that quibblers might perceive. The contents are important, the reviews are recent, and the focus on yield improvement gives a common theme to the chapters. The result is a useful reference for graduate students, agronomists, and breeders who are interested in wheat.

Gary M. Paulsen
Department of Agronomy,
Kansas State University,
Manhattan, KS 66506-5501
(gmpaul@ksu.edu)


This book is intended to be a companion volume to Forage Seed Production, Volume 1: Temperate Species, edited by D.T. Fairley and J.G. Hampton. As stated by the editors of Volume 2, these two volumes “provide the definitive resource for all those concerned with the profitable seed production of grasses and legumes for forage, recreational and amenity use.” The many years of direct experience and accumulated knowledge of the editors of Volume 2 have been wisely used to select authors and contributors of the 34 chapters of this volume. Much of the knowledge base concerning tropical forage seed production as well as species characteristics and husbandry is either covered or referenced in this book.

This volume is divided into four primary sections including: “Overview”, “Principles”, “Case Histories”, and “Tropical and Subtropical Forage Seed Production: Looking Back and to Future Horizons”. In the “Overview”, the editors preview the contents of the book and describe the industry, with emphasis on the uniqueness of tropical forages. Unlike the temperate forages, tropical forages consist of a large number of species. The terms tropical and subtropical are used to refer to...