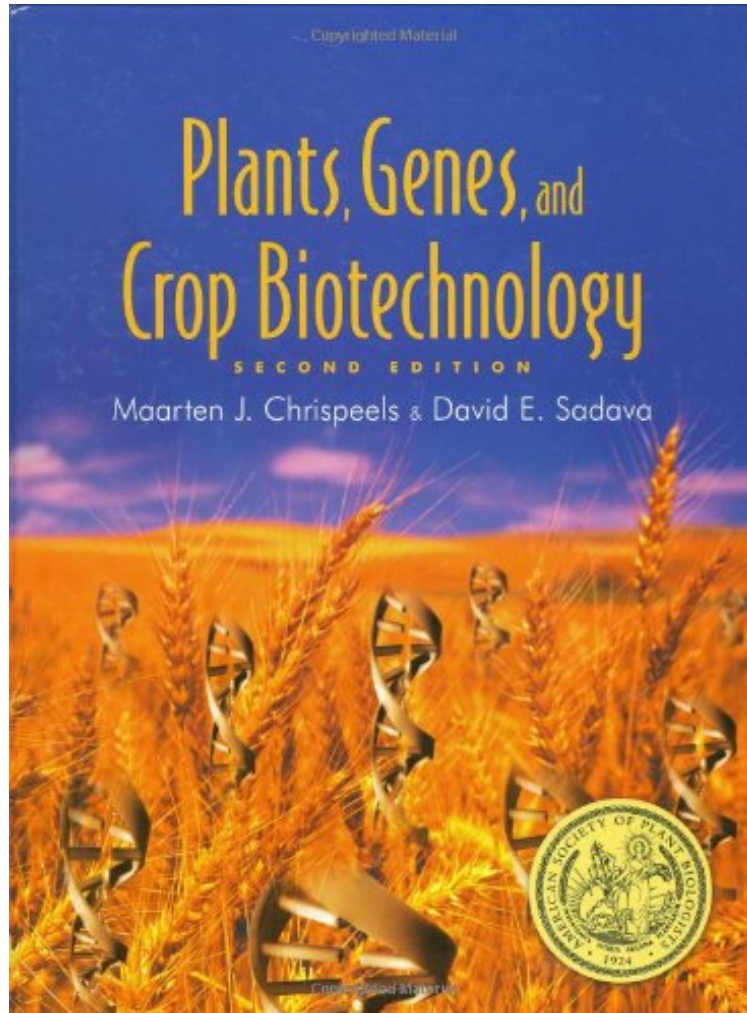


Plants, Genes, And Crop Biotechnology

Maarten J. Chrispeels, David E. Sadava
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Maarten J. Chrispeels, David E. Sadava : Plants, Genes, And Crop Biotechnology before purchasing it in order to gage whether or not it would be worth my time, and all praised Plants, Genes, And Crop Biotechnology:

0 of 0 people found the following review helpful. Recommended.
By KellyBroad coverage of topics related to plant growth. Text is very well written and enjoyable to read, with an adequate amount of pictures and schemes to create strong visual effects. Recommended.
0 of 0 people found the following review helpful. Comprehensive introduction to agriculture
By Felipe SarmientoIt is a comprehensive approach to agriculturr as a whole. Besides the crop biotechnology science, it offers an interesting inttroduction to the social side of agriculture. Recommended
12 of 14 people found the following review helpful. Makes a Few Bold Admissions
By Gregory McMahanThis book contains twenty chapters plus a comprehensive index. Each chapter is written by a distinguished individual in his or her field. Each chapter consists of general opening remarks, detailed information about the subject of each chapter, a chapter summary at the

end of each chapter, discussion questions and a list of references for further reading. The lead authors have created a text that would serve double duty as either an adequate text for an introductory lower division course on agronomy/plant sciences, or as a supplemental text for an upper division plant biology course which looks at the social and ethical dimensions of biotechnology and genetically modified organisms. All the contributors share the belief that agricultural biotechnology in its current manifestation is merely an extension of biology in the natural world, and is but one consequence of Watson Crick's monumental discovery. Chrispeels and Sadava, the two contributors responsible for compiling the text, boldly state that the biggest beneficiaries of the new GM technology will be those living in the developing countries, and as such reflects the standard party line of the pro-ag-biotech groups and organizations. All inherent biases aside, the book is highly notable because of several bold admissions made throughout the text. First, the authors readily admit that agricultural biotechnology has no defensible place or justification in a world currently awash in plentiful food, but at the same time, they do believe that biotechnology will play an important role in tomorrow's world agriculture. Second, they also readily concede that distribution of food, and not its production, is the main culprit for hunger, but other issues do play an important role. Related to this is their admission that the ability to pay for food matters more than the supply of food itself; if people can pay for it, they will get it (here their words on the subject echo many of the thoughts put forth by Amartya Sen, and before him, Susan George). Third, they admit that most scientists working in the field of population and demography in the late 1960s and early 1970s made flat out wrong predictions about the infamous 'population bomb', and that predictions made today many not come to pass tomorrow- they are just guesses about the future. Here they appear to be backing away from the incendiary rhetoric of environmental luminaries such as Paul Ehrlich and Lester Brown. Fourth, and quite possibly the boldest admission of the text, was their concession that agricultural biotechnology has been oversold. Apparently, they saw fit to stop short of saying that ag-biotech has been and continues to be hyped into the stratosphere, but their very admission alone is satisfactory, as they later lay most of the blame for today's hysteria and urban myths surrounding ag-biotech and GM technologies upon the overselling of the technologies, where it justifiably belongs. Indeed, the authors' concern for the overselling of the promise and potential of biotechnology is readily apparent in the final chapter of the book, where they address the myths and realities of agricultural biotechnology. However, even the authors can not resist the temptation to sell the reader on the potential benefits of an agricultural biotechnology, and the book includes chapters on integrated pest management incorporating the scientific advances of ag-biotech (Chapter 16), weed control strategies using biotechnology (Chapter 17), GM technology as a tool for promoting green agriculture (Chapter 18), and the use of plants as biological factories (Chapter 19). Generally speaking, Chapters 1 through 5 lay down the rationale for incorporation of ag-biotech in food production, and chapters 6 through 15 explain the how to, the ins and outs of the technology and how genetic modification of crops is achieved. Also, chapters 6 through 15 cover all the standard topics one would find in a regular course on agronomy, crop science and plant biology, from plant cell and molecular biology, plant growth and development, seeds and seed technology, the ins and outs of photosynthesis and the physical, biological and environmental factors associated with it, soils and root zone systems, nitrogen cycling, to the historical basis for crop breeding (with some paleo-anthropological perspectives) and the gradual leap from breeding via classical techniques to modern, biotech based methods. Chapter 15 also looks at crop disease and its management from a molecular genetic standpoint, and strikes me as a means to include students in plant pathology. Additionally, the authors paid considerable attention to the problems and challenges of agriculture in Third World countries, in an attempt to demonstrate the veracity of their belief that GM technology can do much to assist the inhabitants there. However, in the process, they belatedly demonstrate that these technologies have been developed to address symptoms of more complex and fundamental problems having an economic, environmental and/or socio-historical basis. Yet, the authors must be credited for admitting that the real need in developing countries is for more research support to address their specific physical and environmental conditions, and for demonstrating that in every single instance where consumer incomes rise and the socio-economic status of women advances, there is an inevitable decrease in birth rates, hunger and malnutrition. Thus, the contributors freely admit that their research and scientific activities chase phantom problems and non-problems. They also admit, albeit obliquely, that ag-biotech in its current manifestation does not address the needs or the fundamental problems faced in the developing or the developed world. In fact, on the one hand, researchers have occupied themselves with testing the limits of GM technology, seeing what they can do, and exploring different directions, while on the other hand, government institutions and corporations have directed their efforts at technological developments for which they have proprietary control, and increasingly, total control over distribution and other supporting activities. Alas, the authors have chosen, perhaps unwisely, to offer any comments on this state of affairs, and what it may mean for everyone. In sum, this book makes quite a few bold admissions, some directly, but most indirectly, and as such, is a necessary read for those interested in the topics of ag-biotech, genetic modification technologies, food production and safety, and crop science in general. It is definitely a good and comprehensive book, containing a level of honesty highly uncommon among textbooks on the subject (albeit couched among questionable pitches about potential benefits of ag-biotech), and its sources for further reading are indispensable. I highly recommend the text to anyone looking to place this contentious scientific topic within a social and ethical context.

Jones and Bartlett Publishers and the American Society of Plant Biologists have teamed up for the Second Edition of *Plants, Genes, and Crop Biotechnology*. The essays collected in this text bring together aspects of genetics and plant breeding, molecular biology and genetic engineering, plant development and reproduction, soils and plant nutrition, agro-ecology and the sustainability of agricultural practices, population increases and the difficulty of eradicating hunger, pest control practices and their environmental consequences, and the role of biotechnology in modern crop production.