

Reddy, K.R., Hodges, H.F. (ed.): **Climate Change and Global Crop Productivity**. - CABI Publishing, Wallingford - New York 2000. 472 pp. GBP 75.00. ISBN 0-85199-439-3.

The rate of global climate change expected over the next century is more than has occurred during the past 10 000 years. The changes in global environment will have profound effects and consequences for natural and agricultural ecosystems. To recognise these changes in detail will be very important in the coming years. To cope with increasing population more food will be necessary to produce under diminishing arable land and water and degrading soils.

This book is a comprehensive examination of the potential effects climate change will have on crop production systems. It also reviews the effects such systems have on climate change itself.

The first (Introduction) and second (The problem: changing biosphere) parts of the book are of general character and describe historical shifts in the earth's temperature and carbon dioxide concentration, discuss the methods of predicting climatic change and the role of today's agriculture in the production and release of greenhouse gases. The individual chapters of the following part (Crop ecosystem responses to climatic change) are devoted to responses of economically important plants and ecosystems: wheat, rice, maize, sorghum, soybean, cotton, root and tuber crops, vegetables, tree crops, productive grasslands, rangelands, Crassulacean acid metabolism crops, and weeds. Each chapter is introduced by brief survey of cultivation

methods. The main part deals with effects of CO<sub>2</sub> concentration and temperature on basic processes (photosynthesis, respiration, stomatal conductance, transpiration, water use efficiency, *etc.*) and on biomass production, plant development and yield. The interactions with other environmental conditions are also included and the mathematical models of growth and production are discussed. Finally, conclusions are presented, and future research directions are suggested. In addition, one chapter in this part is devoted to pests, one chapter to soil organic matter dynamics, and one chapter to interactive effects of ozone, UV-B radiation, SO<sub>2</sub> and CO<sub>2</sub>. The chapters of the fourth part (Mitigation strategies) are focused on crop breeding strategies needed to solve problems and exploit some of the opportunities that may result from global climatic change, and on the role of biotechnology in crop productivity in a changing environment. The last part (Economic and social impacts) shows how growers and production specialists may cope with such environmental changes.

This book is written by leading international authorities from the USA, Europe, Japan, Australia and New Zealand. Readable text is accompanied with many figures and tables. Each chapter is accompanied with comprehensive list of references. It is indispensable for advanced students and researchers in crop science, environmental plant physiology, ecology and climatology.

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