

Book review

Controlled atmosphere storage of fruits and vegetables. By A. K. Thompson. Published in 1998 by CAB International, Wallingford, Oxford OX10 8DE, United Kingdom (email: cabi@cabi.org). 288 p., hardback. ISBN: 0 85199 267 6. Price: £55.00 (US\$100).

This monograph on "Controlled atmosphere storage of fruits and vegetables" is a companion volume to the previously published "Postharvest technology of fruit and vegetables" by the same author. The scientific and commercial interest in controlled atmosphere (CA) storage continues to increase worldwide as producers and marketers strive to improve quality of nutritious fruits and vegetables for consumers on a year-round basis. Professor Thompson has had a long and distinguished career as a researcher, teacher, and consultant in postharvest science and technology in different parts of the world but particularly in the tropics and more recently in the United Kingdom at Cranfield University at Silsoe. Thus he has particular skills, knowledge, and experience to produce this text. In these two volumes he has brought together a wealth of information from the literature and from his own experiences. In this current book his intention is to "provide an easily accessible reference source" for a broad audience of people involved in the fresh fruit and vegetable industry by producing an overview of current knowledge of CA storage.

To a large extent he has achieved his aim. He has utilised more than 750 literature references from diverse sources to create a book that essentially falls into two parts. The first part consists of 116 pages organised into six chapters. The introductory chapter defines terms, provides a brief outline of the historical development of CA (albeit from a United Kingdom/United States perspective, with little reference to contributions from Australia, The Netherlands, and South Africa) as well as a seemingly misplaced section on storage disorders. Why not highlight the undoubted benefits of CA at the front of the book rather than list disadvantages and

problems that may arise from use of the technology? Subsequent chapters deal with: current use of CA storage for fruits and vegetables; the effect of CA on flavour, quality, and physiology; effects of CA on pests and diseases including a brief section on physiological disorders; influence of environmental factors on CA; and a chapter on modified atmosphere (MA) packaging. The second part of 100 pages consists of recommended CA conditions for storing 102 different fruits and vegetables.

Each of the first six chapters is further subdivided into sections containing in total 25 figures, 23 tables, and 21 black and white photographs all of varying quality. The style of the presentation reads more like a review of the literature, rather than a textbook. There tends to be listing of salient research findings related to the many sections within these chapters, with little if any attempt to explain the rationale of the results or the physiological basis of what is reported. The listing of information is not discriminating; often different results relating to a particular phenomenon are presented without any explanation as to why the differences might occur. Information presented would have been of greater value to the reader if the author had synthesised the varying research outputs and generalised about the significance of the overall results presented in the different sections.

Although the basic mechanism by which CA induces its effect on delaying senescence in fresh fruit and vegetables is still not fully elucidated, a great deal has been learnt about the underlying physiological and biochemical mechanisms in recent years. The author has included sections on the interaction between CO₂ and O₂ with ethylene, temperature and relative humidity, as well as an interesting diversion into use of ultra high O₂. In addition the influence of CA on flavour and off-flavours, acidity, volatile compounds, browning, nutritional attributes, and respiration are examined. However the lack of analysis of information presented is frustrating to this reader. It would have been a most useful addition to this book if an interpretative summary of such knowledge had been included.

