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breeding: the use of molecular markers; 3.10 Future perspectives; 3.11 Abbreviations used in this chapter; 3.12 References and further reading; Chapter 4. Genes involved in plant defence mechanisms; 4.1 Introduction; 4.2 Mechanisms of plant response to pathogens; 4.3 Genes in the defence against virus; 4.4 Genes in the defence against fungi; 4.5 Genes in the defence against insects and nematodes 4.6 Long-term impact of genetically modified plants in their response to pathogens 4.7 Future trends; 4.8 Sources of further information and advice; 4.9 References; Chapter 5. Genes selected for their role in modifying post-harvest life; 5.1 Introduction; 5.2 Biotechnological control of fruit ripening and post-harvest diseases; 5.3 Biotechnological control of vegetable ripening and post-harvest diseases; 5.4 Future trends; 5.5 Sources of further information; 5.6 References; Chapter 6. The use of molecular genetics to improve food properties; 6.1 Introduction 6.2 Changing the nutritional value of foods 6.3 Modification of fruit colour and sweetness; 6.4 Modification of food-processing properties of fruit; 6.5 Molecular farming and therapeutic food; 6.6 Future trends; 6.7 Sources of further information and advice; 6.8 References; Chapter 7. Nutritional enhancement of plant foods; 7.1 Introduction; 7.2 The nutritional importance of plants; 7.3 Strategies for nutritional enhancement; 7.4 The priorities for nutritional enhancement; 7.5 Relationship of structure to nutritional quality (bioavailability) 7.6 Nutritional enhancement versus food fortification 7.7 Constraints on innovation; 7.8 Future trends; 7.9 Further information; 7.10 References; Part II: Case studies; Chapter 8. Tomato; 8.1. Introduction; 8.2 Modifications targeting fruit; 8.3 Modifications targeting seeds and germination; 8.4 Modifications targeting biotic and abiotic stress tolerance; 8.5 Modifications targeting vegetative tissues and flowers; 8.6 Expression of novel proteins in tomato; 8.7 Regulation of transgenic gene expression in tomato; 8.8 Conclusions; 8.9 References Chapter 9. Commercial developments with transgenic potato

Sommario/riassunto

Genetic modification is one of the most important and controversial issues facing the food industry. With its international team of contributors, Fruit and vegetable biotechnology analyses its major impact on fruit and vegetable cultivation and processing. The book begins with an analysis of the methods available to the biotechnologist. Part one then considers the range of traits that have been the subject of modification. Chapter 3 discusses the modification of such agronomic traits as fruit quality and resistance to various kinds of environmental stress, as well as the use of molecu