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Nota di contenuto	Genetically Engineered Food; Contents; Preface; List of Contributors; Part I Application and Perspectives; 1 Transgenic Modification of Production Traits in Farm Animals; 1.1 Introduction; 1.2 The Creation of Transgenic Animals; 1.2.1 Pronuclear DNA Microinjection; 1.2.2 Retroviral Vectors; 1.2.3 Pluripotent Stem-cell Technology; 1.2.4 Nuclear Transfer Using Transgenic Cells; 1.3 Gene Transfer in Poultry; 1.4 Gene Transfer in Fish; 1.5 Transgenes - Gene Constructs; 1.6 Transgenic Animals with Agricultural Traits; 1.7 Improved Growth Rate, Carcass Composition, and Feed Efficiency 1.7.1 Transgenic Mammalian Farm Animals 1.7.2 Transgenic Fish; 1.8 Alteration of the Composition of Milk; 1.9 Improved Animal Health; 1.9.1 Additive Gene Transfer of Resistance Genes; 1.9.2 Gene Targeting of Susceptibility Genes; 1.10 Improved Biochemical Pathways; 1.11 Improved Wool Production; 1.12 Transgenic Farm Animals, Biosafety Issues, Animal Welfare, and Ethics; 1.13 Conclusion; References; 2 Genetically Modified Plants; 2.1 Methods for Establishing Genetically Modified Plants; 2.1.1 Transformation Methods; 2.1.1.1 Agrobacterium

Transformation; 2.1.1.2 Direct Gene Transfer
2.1.2 Tissue Requirements 2.1.3 Molecular Requirements; 2.1.3.1 Promoter; 2.1.3.2 Codon Usage; 2.1.3.3 Selectable Marker and Reporter Genes; 2.2 GM Plants Already on the Market (EU, USA, Canada, Japan); 2.2.1 Herbicide Resistance in Soybean, Maize, Oil-seed rape, Sugar Beet, Wheat, Rice, and Cotton; 2.2.2 Insect Resistance in Maize, Potatoes, Tomatoes, and Cotton; 2.2.3 Virus-resistance, Male Sterility, Delayed Fruit Ripening, and Fatty Acid Content of GMPs; 2.3 GM Plants "In the Pipeline"; 2.3.1 Input Traits; 2.3.1.1 Insect Resistance; 2.3.1.2 Virus, Fungal, Bacterial, and Nematode Resistance 2.3.1.3 Tolerance Against Abiotic Stress 2.3.1.4 Improved Agronomic Properties; 2.3.2 Traits Affecting Food Quality for Human Nutrition; 2.3.2.1 Increased Vitamin Content; 2.3.2.2 Production of Very-long-chain Polyunsaturated Fatty Acids; 2.3.2.3 Increased Iron Level; 2.3.2.4 Improved Amino Acid Composition; 2.3.2.5 Reduction in the Amount of Antinutritive Factors; 2.3.2.6 Production of "Low-calorie Sugar"; 2.3.2.7 Seedless Fruits and Vegetables; 2.3.3 Traits that Affect Processing; 2.3.3.1 Altered Gluten Level in Wheat to Change Baking Quality 2.3.3.2 Altered Grain Composition in Barley to Improve Malting Quality 2.3.4 Traits of Pharmaceutical Interest; 2.3.4.1 Production of Vaccines; 2.3.4.2 Production of Pharmaceuticals; 2.4 Outlook; References; 3 Fermentation of Food by Means of Genetically Modified Yeast and Filamentous Fungi; 3.1 Introduction; 3.1.1 Why do we Ferment Foodstuffs?; 3.1.2 Fermented Foods of Plant and Animal Origin; 3.2 Yeast; 3.2.1 Methods of Recombinant DNA Technology in Yeast; 3.2.2 Genetically Modified Saccharomyces Strains; 3.2.2.1 Beer; 3.2.2.2 Wine; 3.2.2.3. Sake; 3.2.2.4. Bread 3.2.3 Genetically Modified Non-Saccharomyces Strains

Sommario/riassunto

Continuing the very successful first edition, this book reviews the most recent changes to the legal situation in Europe concerning genetically engineered food and labeling. Due to the extremely rapid developments in green biotechnology, all the chapters have been substantially revised and updated. Divided into three distinct parts, the text begins by covering applications and perspectives, including transgenic modification of production traits in farm animals, fermented food production and the production of food additives using filamentous fungi. The second section is devoted to legislatio
