



Plant Biotechnology

Current and
Future
Applications
of Genetically
Modified
Crops

Nigel Halford
Editor

 WILEY

Contents

<i>List of Contributors</i>	page vii
<i>Preface</i>	xi
PART I THE CURRENT SITUATION	1
1.1 From Primitive Selection to Genetic Modification, Ten Thousand Years of Plant Breeding	3
<i>Nigel G. Halford</i>	
1.2 Crop Biotechnology in the United States: Experiences and Impacts	28
<i>Sujatha Sankula</i>	
1.3 Development of Biotech Crops in China	53
<i>Qingzhong Xue, Yuhua Zhang and Xianyin Zhang</i>	
PART II NEW DEVELOPMENTS	69
2.1 Advances in Transformation Technologies	71
<i>Huw D. Jones</i>	
2.2 Enhanced Nutritional Value of Food Crops	91
<i>Dietrich Rein and Karin Herbers</i>	
2.3 The Production of Long-Chain Polyunsaturated Fatty Acids in Transgenic Plants	118
<i>Louise V. Michaelson, Frédéric Beaudoin, Olga Sayanova and Johnathan A. Napier</i>	
2.4 The Application of Genetic Engineering to the Improvement of Cereal Grain Quality	133
<i>Peter R. Shewry</i>	
2.5 Improvements in Starch Quality	151
<i>Michael M. Burrell</i>	

2.6	Production of Vaccines in GM Plants	164
	<i>Liz Nicholson, M. Carmen Cañizares and George P. Lomonossoff</i>	
2.7	Prospects for Using Genetic Modification to Engineer Drought Tolerance in Crops	193
	<i>S.G. Mundree, R. Iyer, B. Baker, N. Conrad, E.J. Davis, K. Govender, A.T. Maredza and J.A. Thomson</i>	
2.8	Salt Tolerance	206
	<i>Eduardo Blumwald and Anil Grover</i>	
2.9	Engineering Fungal Resistance in Crops	225
	<i>Maarten Stuiver</i>	
PART III	SAFETY AND REGULATION	241
3.1	Plant Food Allergens	243
	<i>E.N. Clare Mills, John A. Jenkins and Peter R. Shewry</i>	
3.2	Environmental Impact and Gene Flow	265
	<i>P.J.W. Lutman and K. Berry</i>	
3.3	Risk Assessment, Regulation and Labeling	280
	<i>Nigel G. Halford</i>	
Index		295