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Autore	Sutton, Michael
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Pubbl/distr/stampa	Oxfordshire, England ; ; Boston, Massachusetts : , : CAB International, , 2015 ©2015
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Soggetti	Transgenic plants - Insect resistance Bacillus thuringiensis
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Contents; Contributors; Preface; PART 1. THE EXTENT OF USE OF BT CROPS AND THE EMERGING PROBLEM OF RESISTANCE; 1 Successes and Failures of Transgenic Bt Crops: Global Patterns of Fieldevolved Resistance; 2 Status of Resistance to Bt Cotton in China: Cotton Bollworm and Pink Bollworm; 3 Insect Resistance to Bt Toxins in Brazil and Latin America; 4 Resistance of Busseola fusca to Cry1Ab Bt Maize Plants in South Africa and Challenges to Insect Resistance Management in Africa; 5 Resistance of Cabbage Loopers to Btk in a Greenhouse Setting: Occurrence, Costs, Spread and Management PART 2. MECHANISM OF ACTION OF BT TOXINS AND DIFFERENT RESISTANCE MECHANISMS6 Different Models of the Mode of Action of Bt 3d-Cry Toxins; 7 Roles of Insect Midgut Cadherin in Bt Intoxication and Resistance; 8 Mechanism of Cry1Ac Resistance in Cabbage Loopers - A Resistance Mechanism Selected in Insect Populations in an Agricultural Environment; 9 Roles of ABC Proteins in the Mechanism and Management of Bt Resistance; 10 The Role of Proteolysis in the Biological Activity of Bt Insecticidal Crystal Proteins

11 The Lessons that *Caenorhabditis elegans* Has Taught Us About the Mechanism of Action of Crystal Proteins  
PART 3. STRATEGIES TO COUNTER RESISTANCE;  
12 The Development and Prospect of Discovery of Bt Toxin Genes;  
13 Cry Toxin Binding Site Models and their Use in Strategies to Delay Resistance Evolution;  
14 Countering Pest Resistance with Genetically Modified Bt Toxins;  
15 RNA Interference Strategy for Crop Protection Against Insect Pests;  
PART 4. INSECT RESISTANCE MANAGEMENT AND INTEGRATED PEST MANAGEMENT  
16 Resistance Management for Bt Maize and Above-ground Lepidopteran Targets in the USA: From Single Gene to Pyramided Traits  
17 Insect Resistance Management and Integrated Pest Management for Bt Crops: Prospects for an Area-wide View;  
Index; A; B; C; D; E; F; G; H; I; J; L; M; N; O; P; Q; R; S; T; U; V; W; X; Y

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## Sommario/riassunto

*Bacillus thuringiensis* (Bt) bacteria use Cry proteins to kill their insect larval hosts. The expression of certain Cry toxins in transgenic crops has been widely used to achieve efficient control of insect pests. This book describes the use of Bt crops and the emerging problem of resistance, recent progress in understanding the mechanism of action of Bt toxins, different resistance mechanisms and strategies to cope with resistance in the field. It describes resistant insects found in the field in different countries, particularly in the developing world, and ways to counter resistance such as

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