Plant Breeding Reviews. Volume 38

Description: Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a fundamental understanding of crop genetics, and applications to major crops. It is a serial title that appears in the form of one or two volumes per year.

The main topics covered include:

- Daniel Zohary: Geneticist and Explorer of Plant Domestication
- The Use of Association Genetics Approaches in Plant Breeding
- Epigenetics Connects the Genome to its Environment
- Peanuts Improvement for Human Health
- Rice Breeding in Latin America

Contents: Contributors ix

1. Daniel Zohary: Geneticist and Explorer of Plant Domestication 1
   Giora Simchen
   I. Early Days 2
   II. Genetic Relationships among Related Plant Species 3
   III. Domestication of Crops and Fruit Trees 4
   IV. The Scientific Approach and Methodology of Daniel Zohary 6
   V. The Book 7
   VI. Awards, Honors, and Recognition 8
   VII. Personality 9
   Literature Cited and Selected Publications of Daniel Zohary 10

2. The Use of Association Genetics Approaches in Plant Breeding 17
   María F. Álvarez, Teresa Mosquera, and Matthew W. Blair
   I. Introduction 19
   II. Advantages of Association Mapping Approaches 20
   III. Methods of Association Genetics 26
   IV. Examples of Association Mapping 34
   V. Software for Data Analysis 46
   VI. Association Mapping Compared with Linkage Mapping 48
   VII. Genome-Wide Selection and Genomic Selection 52
   VIII. Outlook 54
Acknowledgments 57

Literature Cited 57

3. Epigenetics Connects the Genome to Its Environment 69
Ray A. Bressan, Jian-Kang Zhu, Michael J. Van Oosten, Albino Maggio, Hans J. Bohnert, and Viswanathan Chinnusamy

I. Introduction 71

II. Historical Perspective and Conceptual Framework 72

III. Epigenetics 80

IV. Epigenetic Memory 90

V. Sex, Epigenetics, and the Genome 93

VI. Adaptation is a Form of Development 102

VII. Evolution: The Engine of Ideas 108

Acknowledgments 121

Literature Cited 121

4. Peanut Improvement for Human Health 143
Sangam Dwivedi, Naveen Puppala, Soheila Maleki, Peggy Ozias-Akins, and Rodomiro Ortiz

I. Introduction 146

II. Genetic Variability for Nutritional Traits 149

III. Peanut Allergens 153

IV. Predicting Seed Quality and Allergens 156

V. Genetic and Molecular Bases of High Oleate Trait 159

VI. Sequencing the Peanut Genome and Implications in Breeding 159

VII. Transgene(s) to Produce Nutrient-Dense and Toxin and Allergen-Free Peanuts 161

VIII. Breeding Opportunities 165

IX. Outlook 169

Acknowledgments 171

Literature Cited 171

5. Rice Breeding in Latin America 187
César P. Martínez, Edgar A. Torres, Marc Chatel, Gloria Mosquera, Jorge Duitama, Manabu Ishitani, Michael Selvaraj, Beata Dedicova, Joe Tohme, Cécile Grenier, Mathias Lorieux, Maribel Cruz, Luis Berrío, Edgar Corredor, Gonzalo Zorrilla de San Martín, Flavio Breseghello, Orlando Peixoto, Jose Manoel Colombari Filho, Adriano Pereira de Castro, Sergio Iraçu Gindri Lopes, Mara Barbosa, Gustavo Rodrigo Daltrozzo Funck, Pedro Blanco, Fernando Pérez de Vida, Federico Molina, Juan Rosas, Sebastián Martínez, Victoria Bonnecarrere, Silvia Garaycochea, Gonzalo Carracelas, Alfredo Marin, Fernando Correa-Victoria, Ismael Camargo, and Carlos Bernardo Bruzone

I. Introductory Remarks 192
II. The CIAT Rice Program 194
III. Advances in Population Improvement in Latin America and the Caribbean 202
IV. Genetics and Genomics Approaches to Improve Rice Breeding 206
V. Breeding for Resistance to Rice Pathogens 216
VI. Breeding for Adaptation to Abiotic Stresses 223
VII. Hybrid Rice Breeding 230
VIII. Rice Breeding Programs 234
IX. Perspectives and Future Directions 265
Literature Cited 266
Subject Index 279
Cumulative Subject Index 281
Cumulative Contributor Index 307

Order by Fax - using the form below
Order by Post - print the order form below and send to
Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

Product Name: Plant Breeding Reviews. Volume 38
Web Address: http://www.researchandmarkets.com/reports/2866189/
Office Code: SCD24BCV

Product Format
Please select the product format and quantity you require:

Quantity
Hard Copy (Hard Back): □ USD 201 + USD 29 Shipping/Handling

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: □ Mr □ Mrs □ Dr □ Miss □ Ms □ Prof
First Name: ___________________________ Last Name: ___________________________
Email Address: * ___________________________
Job Title: ___________________________
Organisation: ___________________________
Address: ___________________________
City: ___________________________
Postal / Zip Code: ___________________________
Country: ___________________________
Phone Number: ___________________________
Fax Number: ___________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets, Guinness Center, Taylors Lane, Dublin 8, Ireland.

☐ Pay by wire transfer: Please transfer funds to:
  Account number 833 130 83
  Sort code 98-53-30
  Swift code ULSBIE2D
  IBAN number IE78ULSB98533083313083
  Bank Address Ulster Bank, 27-35 Main Street, Blackrock, Co. Dublin, Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ________________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World