

Contents

Part I Introductory Chapters

1 Introduction to Plant-Parasitic Nematodes; Modes of Parasitism	3
Roland N. Perry and Maurice Moens	
2 Current Nematode Threats to World Agriculture	21
J. M. Nicol, S. J. Turner, D. L. Coyne, L. den Nijs, S. Hockland and Z. Tahna Maafi	
3 Phylogeny and Evolution of Nematodes	45
Wim Bert, Gerrit Karssen and Johannes Helder	
4 Cyst Nematodes and Syncytia	61
Miroslaw Sobczak and Wladyslaw Golinowski	
5 Root-knot Nematodes and Giant Cells	83
Michael G. K. Jones and Derek B. Goto	

Part II Resources for Functional Analysis of Plant-Nematode Interactions

6 Genome Analysis of Plant Parasitic Nematodes	103
Pierre Abad and James P. McCarter	
7 Transcriptomes of Plant-Parasitic Nematodes	119
Joachim Jacob and Makedonka Mitreva	
8 Arabidopsis as a Tool for the Study of Plant-Nematode Interactions	139
Godelieve Gheysen and Carmen Fenoll	

9	Transcriptomic and Proteomic Analysis of the Plant Response to Nematode Infection	157
	Carolina Escobar, Sigal Brown and Melissa G. Mitchum	
10	<i>C. elegans</i> as a Resource for Studies on Plant Parasitic Nematodes	175
	Laura M. Jones, Carla De Giorgi and Peter E. Urwin	
11	Parallels Between Plant and Animal Parasitic Nematodes	221
	Aaron G. Maule and Rosane Curtis	
Part III Molecular Genetics and Cell Biology of Plant-Nematode Interactions		
12	Degradation of the Plant Cell Wall by Nematodes	255
	Eric L. Davis, Annelies Haegeman and Taisei Kikuchi	
13	Suppression of Plant Defences by Nematodes	273
	Geert Smant and John Jones	
14	Other Nematode Effectors and Evolutionary Constraints	287
	Marie-Noëlle Rosso and Eric Grenier	
15	Disease Resistance-Genes and Defense Responses During Incompatible Interactions	309
	Isgouhi Kaloshian, Olivia J. Desmond and Hagop S. Atamian	
16	The Role of Plant Hormones in Nematode Feeding Cell Formation	325
	Aska Goverse and David Bird	
17	Unravelling the Plant Cell Cycle in Nematode Induced Feeding Sites	349
	Janice de Almeida Engler, Gilbert Engler and Godelieve Gheysen	
18	The Plant Cytoskeleton Remodelling in Nematode Induced Feeding Sites	369
	Janice de Almeida Engler and Bruno Favery	
19	Cell Wall Modifications Induced by Nematodes	395
	Mirosław Sobczak, Sylwia Fudali and Krzysztof Wiczorek	
20	Water and Nutrient Transport in Nematode Feeding Sites	423
	Florian M. W. Grundler and Julia Hofmann	

**Part IV Applied Aspects of Molecular Plant Nematology:
Exploiting Genomics for Practical Outputs**

21 Molecular Tools for Diagnostics	443
Philippe Castagnone-Sereno, Andrea Skantar and Lee Robertson	
22 Breeding for Nematode Resistance: Use of Genomic Information	465
Bernard Caromel and Christiane Gebhardt	
23 Biological Control of Plant-Parasitic Nematodes: Towards Understanding Field Variation Through Molecular Mechanisms	493
Keith G. Davies and Yitzhak Spiegel	
24 Nematode Resistant GM Crops in Industrialised and Developing Countries	517
Catherine J. Lilley, Tina Kyndt and Godelieve Gheysen	
Species Index	543
Gene Index	547
General Index	553

Genomics and Molecular Genetics of Plant-Nematode
Interactions

Jones, J.; Gheysen, G.; Fenoll, C. (Eds.)

2011, XXIV, 557 p., Hardcover

ISBN: 978-94-007-0433-6