Bemisia: Bionomics and Management

The concept of this volume is to follow up on two previous books edited by Dan Gerling and published by Intercep: Whiteflies: their bionomics, pest status and management (1990, ISBN 0-946707-16-2) and Bemisia: 1995 – Taxomomy, Biology, Damage, control and Management (1996, ISBN 1 898298 33.5). The latter, co-edited by Richard Mayer, consisted of proceedings from the first International *Bemisia* Workshop that took place in Israel in 1995. The proposed book will be a follow-up of the 4th International *Bemisia* workshop that took place in Florida last December. Our objective is to provide an up-to-date review of *Bemisia* taxomomy, genetics, biology, ecology and management, focusing mostly on progress during the last 11 years, and directed at the informed professional that may not necessarily be specializing in whitefly research. This approach will assure us a wide audience as *Bemisia* is a key pest in many agricultural systems.

Springer Science + Business Media has agreed to publish this volume, with the final draft submitted before the end of 2007. The projected length is about 350 pages divided into 5 sections: (1) Taxonomy and Genetics, (2) Biology and Ecology, (3) Vector Relations, (4) Management and (5) Genomics, for a total of 13 chapters. The first 4 sections will progress from basic to applied. The last section will consist of only one chapter which in some sense projects the previous 12 into the future by describing the potential of genomic methods to illuminate many of these same areas of research.

This structure is in keeping with our stated goal of providing a broad but thorough review of the subject matter. Each section has its section editor, and in many cases, a co-editor, all leaders in their fields. Section editors are responsible for writing an introduction to each chapter, and working with the chapter authors on content and style. The overall editor will write an introduction to the book and work with the section editors to help them produce a cohesive work that thoroughly covers the subject matter to sufficient depth without being overly exhaustive in any one area.

All authorships are not yet assigned! Interested parties should contact the respective section editors as soon as possible. An outline of the book follows:

Introduction: P. Stansly

Section I. Taxonomy and Genetics (Editor, Judy Brown).

Chapter Title	**Subject Coverage**
Introduction	Introduce topic area, outline chapters and coverage
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1. Systematics of *Bemisia* and *Bemisia* Relatives	Evolutionary history, *B. tabaci* complex, *B. afer* complex, *Lepaleyrodes* and other *Bemisia*-like species
2. Molecular Genetics	Genetic methods, biotypes, phylogeny of the B. tabaci complex
3. Gene Flow and Populations	Isolating mechanisms, ecological effects on genetic makeup and diversity

Section II: Biology & Ecology (Co-editors: Steven E. Naranjo & James P. Legg)

Chapter Title	**Subject Coverage**
Introduction	Introduce topic area, outline chapters and coverage
4. Structure, Function and Behavior	Morphology, feeding and mating behavior, life history

Section II: (continued)	Biology & Ecology (Co-editors: Steven E. Naranjo & James P. Legg)
5. Mutualistic and Dependent Relationships with Other Organisms	Host plant, virus and symbiont effects on life history and behavior
6. Population Dynamics, Demography, Migration and Spread	Demographics (life tables), spatial and temporal dynamics, sampling, population models, invasion mechanisms

Section III: Virus-vector relationships (Co-editors: Jane Polston & Moshe Lapidot)

Chapter Title	Subject Coverage
Introduction	Introduce topic area (viruses vectored by whitefly), outline chapters and coverage, historical perspectives
7. Plant-Vector-virus interactions	Criniviruses, Ipomoviruses, Begomoviruses including transovarial transmission and influence of Bemisia biotypes
8. Epidemiology	Cassava pandemics, CLDrD in Asia, viruses in Latin America, TYLCD epidemics

Section IV: Management of Bemisia in Diverse Cropping Systems (Co-editors: Dan Gerling and Rami Horowitz)

Chapter Title	Subject Coverage
Introduction	Introduce topic area, outline chapters and coverage- explain that this deals with updating the control techniques
9. New Agents and Insecticide Resistance Management	New modes of action, soaps and detergents, new insecticide designs; resistance to insecticides- mechanisms of resistance; IRM programs
10. Cultural Control and Host Plant Resistance	Application of resistance to Bemisia and whitefly transmitted viruses, TYLCV. Effect of plastic sheets, colors, screens, traps
11. Biological Control Agents	Parasitoids, Predators Diseases
12. IPM	Integrated systems in open field and protected agriculture

Prospects for Application of Genomics (Editor: Robert Shatters)

Introduction	Genomics as a tool for whitefly research
13. Potential Applications	Evolution, behavior, plant, virus interactions, symbiosis, defense and response to stress including pesticides