



N. G. Ravichandra

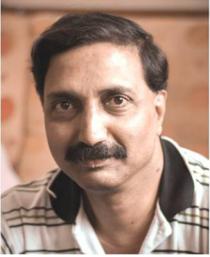
Agrochemicals in Plant Disease Management

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AGROCHEMICALS IN PLANT DISEASE MANAGEMENT

ABOUT THE AUTHOR



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Dr. N.G. Ravichandra has participated and presented original papers on various aspects of plant diseases in several national and international conferences. He has undergone advanced training programs sponsored by the Department of Biotechnology & Indian Council of Agricultural Research, New Delhi, India. He has operated research projects funded by the Department of Bio-Technology & Indian Council of Agricultural Research, New Delhi, India as Principal Investigator and Co- Principal Investigator. He was involved in developing eight technologies for the management of root-knot nematodes infecting tomato, brinjal and rice, which have been included in the Package of Practices of University of Agricultural Sciences, Bengaluru, Karnataka, India.

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PREFACE

A vast number of plant pathogens cause diseases in crops. They are difficult to control as they form complex diseases and their populations vary with time, space and genotype. They evolve, often overcoming the resistance that may have been the hard-won achievement of the plant breeder. Use of chemicals has been critical in preventing losses due to plant diseases and is one of the most popular and most sought after disease management practices.

Agrochemicals have been used against plant diseases since the 1940s. During the previous decades, there has been a tremendous development in all aspects related to agrochemicals. The agrochemical industry has come a long way with a unique shape and the release of a wide range of chemicals exhibiting novel modes of action. Such latest information on these developments is not much familiar either to academicians or students. Partly this ignorance has been due to the non-availability of a standard publication which would furnish all the aspects related to major agrochemicals used to combat plant diseases. In addition, various courses related to the chemicals used in plant disease management are being offered at most agricultural and horticultural universities, as per the syllabus prescribed by the Indian Council of Agricultural Research (ICAR), New Delhi. Readers, particularly students are in search of a complete book that covers the entire syllabus on agrochemicals. This book fulfils these requirements.

The main objective of the book is to provide detailed and the latest information on three major agrochemicals (fungicides, bactericides/antibiotics and nematicides) in a systematic and easily understandable format as a ready reference to its readers. It consists of nine chapters: “Agrochemicals in Plant Disease Management - Current Scenario, History and Development of Agrochemicals, Formulations, Application and Phytotoxicity of Agrochemicals, Classification and Modes of Action of Agrochemicals, Registration and Regulation of Agrochemicals, Safe Handling and Use of Agrochemicals, Compatibility and Persistence of Agrochemicals, Pollution and Hazards by Agrochemicals and New Generation Fungicides”, a glossary of frequently used key terms and a detailed bibliography. Annexures related to few essential aspects of agrochemicals have also been included. Relevant photographs, illustrations, tables, prominent trade names of agrochemicals and other useful information add colour to the contents.

It is sincerely hoped that the book would introduce this fascinating subject to the students, serve as a source book for the faculty, academicians, scientists and serve as a handbook to the extension personnel, private agrochemical firms, seed industries, agrochemical dealers, nursery holders, officers of the State Departments of Agriculture, Horticulture, Sericulture & Forestry, policy makers and all those interested in crop disease management.

The author welcomes suggestions for making the book more complete and for improvements in the future editions.

N.G. Ravichandra

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I would like to express my deep sense of gratitude to my beloved parents Sri. N. Gurushankar and Smt. Parvathamma, to whom I affectionately dedicate this book.

I wish to record my appreciation and affectionate thanks to my wife, Ms. Deepthi and daughter, Ms. Anusha for their affection, patience, keen interest and follow-up throughout the preparation of the manuscript. Mere words fail to acknowledge their support and cooperation. I am grateful to my in-laws for their encouragement.

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FOREWORD

Plant diseases are a normal part of nature. In order to maintain a sufficient food supply for the growing world's population, it is necessary for those involved in plant growth and management to find ways to combat plant diseases that are capable of destroying crops on a large scale. Plant disease management has become heavily dependent on chemicals to suppress a wide range of diseases that threaten crops. Chemicals also constitute a critical element in effective Integrated Disease and Pest Management programs. Many of the current chemicals produce excellent results with respect to efficacy, crop quality, food safety and improved cost/profit ratios of agricultural production.

During the past decades ample progress has been achieved in the agrochemical sector. However, the published information on the latest developmental aspects related to agrochemicals, particularly fungicides, bactericides and nematicides, is either meager or incomplete. There is a gap of proper source dissemination between the chemical industry and the academicians / students. Agricultural and Horticultural Universities offer a course on 'Chemicals used in plant disease management' in their Degree Programmes. Students are in search of a suitable publication in order to update their knowledge on agrochemicals.

This gap has been successfully filled-in by this new book authored by Dr. N.G. Ravichandra. The book on "Agrochemicals in plant disease management" deals with key aspects of agrochemicals employed in disease management and also covers the syllabus prescribed by the Indian Council of Agricultural Research (ICAR), New Delhi. Besides, glossary of major terms, bibliography, befitting illustrations and suitable annexures have added value to the book. The organization of the contents, adequate latest information and simplicity in style amply allude to the author's perspicuity in writing. I compliment and congratulate Dr.N.G.Ravichandra for an admirable attempt to fill the void to facilitate learning and teaching with greater understanding at both the levels, i.e., students and teachers.



Y.G. Shadakshari
Director of Research

CONTENTS

<i>Preface</i>	vii	2.3.2	Agrochemicals in ancient times	29	
<i>Acknowledgement</i>	ix	2.3.3	Modern agrochemicals	30	
<i>Foreword</i>	x	2.3.4	Milestone fungicides	32	
1. Agrochemicals in Plant Disease Management: Current Scenario	1—23	2.3.5	The benefits and risks of fungicides	37	
1.1	Introduction	1	2.3.6	An overview of fungicide development and usage	38
1.2	Global market overview, distribution and scenario	3	2.3.7	Major fungicides groups	41
1.3	Global trade of crop protection products	4	2.3.7.1	Benzimidazoles	41
1.4	Agrochemical industry in India	5	2.3.7.2	Morpholines	41
1.5	Agrochemicals global market	5	2.3.7.3	Piperazines	42
1.6	Agrochemicals firms	10	2.3.7.4	Imidazoles	43
1.7	Agrochemicals research in India	11	2.3.7.5	Pyrimidines	43
1.7.1	Aspects of agrochemical research (Technical /Formulations/Metabolites)	11	2.3.7.6	Triazoles	44
1.8	Growth drivers, challenges, and upcoming trends	11	2.3.7.7	Anilides	44
1.9	Challenges faced by the global agrochemical industry	12	2.3.7.8	Strobilurins	45
1.10	Challenges faced by the Indian agrochemical industries	15	2.3.8	Major fungicides	46
1.10.1	Major opportunities	15	2.3.8.1	1940–1960	46
1.10.2	Threats	16	2.3.8.2	1960–1970	49
1.10.3	Facing the challenges	17	2.3.8.3	1970–1980	53
1.11	Classified list of agrochemicals/pesticides	20	2.3.8.4	1980–2000	56
1.11.1	Major fungicide groups	20	2.3.8.5	2000–present	61
1.11.2	Common bactericides	21	2.3.9	Sources from natural products	64
1.11.3	Nematicides	21	2.3.10	History and development of systemic fungicides	64
1.12	The future of agrochemicals in public health programmes	21	2.3.11	Future trends	68
<i>References</i>	23	2.4	Bactericides (Antibiotics)	69	
2. History and Development of Agrochemicals	24—130	2.4.1	History of antibiotics before Fleming's discovery of penicillin	70	
2.1	Definition of 'agrochemical'	24	2.4.2	History of antibiotics after the mid-1940s	70
2.2	Major lists of agrochemicals	25	2.4.3	Beta-lactam antibiotics	71
2.3	Fungicides	27	2.4.4	Penicillins	72
2.3.1	History of fungicide development	27	2.4.5	Cephalosporins	76
			2.4.6	Carbapenems	81
			2.4.7	Glycopeptides	83
			2.4.8	Aminoglycosides	84

- 2.4.9 (Fluoro) Quinolones 86
- 2.4.10 Nitroimidazoles 88
- 2.4.11 Chloramphenicol 89
- 2.4.12 Co-Trimoxazol 90
- 2.4.13 Some examples of antibiotics derived from fungi 92
- 2.4.14 Further breakthroughs after penicillin 94
- 2.4.15 Antibiotic resistance and a glance into the future of antibiotics 95
- 2.4.16 Modes of action and resistance mechanisms of commonly used antibiotics 96
- 2.5 Nematicides 98
 - 2.5.1 History and development 99
 - 2.5.2 Major groups of nematicides 103
 - 2.5.2.1 Halogenated hydrocarbons (Fumigants/Volatile compounds) 103
 - 2.5.2.2 Non-fumigant nematicides 105
 - 2.5.2.3 Dithiocarbomates 108
 - 2.5.2.4 Unclassified nematicides 111
 - 2.5.2.5 Compounds with nematicidal activity 112
 - 2.5.2.6 Botanical nematicides 112
 - 2.5.3 Methods of application of systemic nematicides 113
 - 2.5.4 Nematicide ecology 115
 - 2.5.6 Modes of action of nematicides 117
 - 2.5.7 Nematicide movement in soil 120
 - 2.5.8 Compendium of agrochemicals' common names 120
 - 2.5.9 Fungicides and bactericides—alphabetical listing with trade names 123
- References 127*
- 3. Formulations, Application and Phytotoxicity of Agrochemicals 131—216**
 - 3.1 Formulations 131
 - 3.1.1 General formulation types 132
 - 3.1.2 Formulation selection considerations 133
 - 3.2 The formulation process 134
 - 3.2.1 Liquid formulations 135
 - 3.2.2 Dry/Solid formulations 138
 - 3.2.3 Agrochemical /Fertilizer combinations 142
 - 3.2.4 Fumigants 143
 - 3.2.5 Adjuvants 144
 - 3.2.6 Formulations and label information 153
 - 3.2.7 Glossary 154
 - 3.2.8 Inert ingredient 155
 - 3.3 Application of agrochemicals 156
 - 3.3.1 Sprayers (Hydraulic energy) 157
 - 3.3.2 Sprayers (Gaseous energy) 158
 - 3.3.3 Dusting equipment 158
 - 3.3.4 Granule applicators 159
 - 3.4 Spray nozzles 159
 - 3.4.1 Single-fluid or hydraulic spray nozzles 160
 - 3.4.2 Plain orifice nozzle 160
 - 3.4.3 Shaped orifice nozzle 160
 - 3.4.4 Surface impingement nozzle 160
 - 3.4.5 Spiral spray nozzle 161
 - 3.4.6 Pressure-swirl spray nozzles 161
 - 3.4.7 Solid-cone Single-fluid nozzle 161
 - 3.4.8 Flat fan nozzles 162
 - 3.4.9 The tongue-type nozzle 162
 - 3.4.10 Compound nozzle 162
 - 3.4.11 Two-fluid nozzles 163
 - 3.4.12 Internal-mix two-fluid nozzles 163
 - 3.4.13 External-mix two-fluid nozzles 163
 - 3.4.14 Control of two-fluid nozzles 163
 - 3.4.15 Rotary atomizers 163
 - 3.4.16 Ultrasonic atomizers 164
 - 3.4.17 Electrostatic 164
 - 3.4.18 Hydraulic energy nozzles 164
 - 3.5 Nozzle spray patterns 164
 - 3.5.1 Hollow cone and solid cone nozzles 164
 - 3.5.2 Flat spray nozzles 164
 - 3.5.3 Even spray nozzles 165
 - 3.5.4 Flooding nozzles 165
 - 3.5.5 Multi-pattern spray nozzles 165
 - 3.6 Nozzle performance factors 165
 - 3.7 Spraying techniques 166
 - 3.7.1 High volume spraying 166
 - 3.7.2 Low volume spraying 168
 - 3.7.3 Ultra low volume spraying 168
 - 3.7.4 Electrostatic spraying 169
 - 3.8 Dusters and dust applications 169
 - 3.8.1 Manually operated dusters 170
 - 3.8.2 Power operated dusters 171
 - 3.8.3 Some simple plant protection equipment 171
 - 3.8.4 Spray droplets, sampling and measurement 172

- 3.8.5 Care and maintenance of plant protection equipment 172
 - 3.8.6 Problems of maintenance and repairs of equipment 173
 - 3.8.7 Timing of spray 175
 - 3.9 Ideal coverage 176
 - 3.10 Spray efficiency and drift 177
 - 3.11 Fungicide toxicology 178
 - 3.12 Environmental fate 181
 - 3.13 Environmental toxicology 182
 - 3.14 Toxicity category and LD50/ LC50 values 184
 - 3.15 Fungicides in order of their adverse effects 185
 - 3.16 Assessment of ecological risks from fungicide use 189
 - 3.17 Antibiotics and human health 192
 - 3.18 Nematicides 194
 - 3.18.1 Application methods 194
 - 3.18.2 Factors affecting effectiveness of fumigants 195
 - 3.19 Degradation of nematicides 197
 - 3.19.1 Effects on non-target organisms 198
 - 3.19.2 Environmental contamination 199
 - 3.20 Movement and toxicity of nematicides in root zone 199
 - 3.20.1 Toxicity and mode of action of nematicides 199
 - 3.20.2 Dosage 201
 - 3.20.3 Effect of tillage 202
 - 3.21 Nematicide distribution 203
 - 3.22 Plant uptake of systemic nematicides 204
 - 3.23 Factors affecting nematicide efficacy 204
 - 3.24 Nematicide ecology 208
 - 3.25 Phytotoxicity 210
 - 3.26 The future of nematicides 212
- References 213*

4. Classification and Modes of Action of Agrochemicals 217—266

- 4.1 Fungicides 217
- 4.2 Making the most of a fungicide application 223
- 4.3 General modes of action of fungicides 225
- 4.4 List of major fungicides (Alphabetically arranged) 237
- 4.5 Bactericides/Antibiotics 239
 - 4.5.1 Sources of antibacterial agents 239
 - 4.5.2 Antibiotic classification 239

- 4.5.3 Broad classes of antibiotics 241
- 4.5.4 Plant-derived compounds against bacteria 244
- 4.5.5 Registered antibiotics and their modes of action 246
- 4.5.6 The antimicrobial activity of plant extracts 249
- 4.5.7 General modes of action of bactericides 249
- 4.6 Nematicides 251
 - 4.6.1 General classification 252
 - 4.6.2 Methods of nematicide application 260
 - 4.6.3 General modes of action of nematicides 261
 - 4.6.4 The future 264

References 265

5. Registration and Regulation of Agrochemicals 267—318

- 5.1 Introduction 267
- 5.2 Registration of agrochemicals (excluding botanicals and bacterial chemicals) 268
- 5.3 United States Environmental Protection Agency (USEPA): Pesticide registration process 272
- 5.4 Biopesticide registration 275
- 5.5 Registration requirements and guidance 276
- 5.6 Types of studies required 277
- 5.7 Pesticide registration manual 279
- 5.8 Labelling requirements 280
- 5.9 Registration committee 280
- 5.10 Grant of license 282
- 5.11 List of forms 283
- 5.12 Guidelines for registration 284
- 5.13 Use and regulation of insecticides and pesticides 286
- 5.14 Guidelines on the data requirement for the grant of registration under the Insecticide Act, 1968 288
- 5.15 Computerized Registration of Pesticides (CROP) using SAP-LAP Framework 291
- 5.16 Sectors associated with the Insecticides Act, 1968 293
- 5.17 Fifty years of legislation 297
- 5.18 Flaws in registration 298
 - 5.18.1 New registration 298
 - 5.18.2 Re-registration 299
 - 5.18.3 Tests and problems associated 299
- 5.19 Ecological risk assessment 302

5.20	Human health risk assessment	303	
5.21	Models and databases used in pesticide risk assessment	304	
5.22	Pesticide labels and labelling	305	
5.23	Pesticide label and the material safety data sheet (MSDS) reading	307	
5.24	Formats for pesticide labels	307	
5.25	Calibration of pesticide equipment	308	
5.25.1	Principles of calibration	308	
5.25.2	General procedures for calibration	308	
5.25.3	Calibration of equipment for typical vector control operations	309	
5.26	Pesticide drift	312	
5.27	Pesticide residues	313	
5.28	Certified organic crops and farms	313	
5.29	Fungicide Resistance Action Committee (FRAC)	314	
5.30	New FRCC group	317	
	<i>References</i>	318	
6.	Safe Handling and use of Agrochemicals		319—329
6.1	Hazard	319	
6.2	Categories of toxicity	320	
6.3	Safety requirements for chemical industry	320	
6.4	Storage standards	323	
6.5	Precautions to be taken during chemical manufacturing	324	
6.6	Precautions to be taken in chemical laboratory	325	
6.7	First-aid treatment	326	
6.8	Chemical toxicity	327	
	<i>References</i>	329	
7.	Compatibility and Persistence of Agrochemicals		330—381
7.1	Agrochemical mixtures	331	
7.2	Types of interactions	331	
7.3	Incompatibility	333	
7.4	Proper mixing procedures	334	
7.5	Types of incompatibility	335	
7.6	Tank mixing guidelines	336	
7.6.1	General principles for mixing pesticides	337	
7.6.2	Specific mixtures to avoid	337	
7.6.3	Considerations for tank mixes	338	
7.6.4	Benefits, concerns and considerations of tank mixes	338	
7.7	General rules on mixing chemicals	340	
7.8	Compatibility chart of agrochemicals	342	
7.9	Compatibility chart of pesticides, fungicides and biopesticides used in potato IPM	344	
7.10	Reasons for incompatibility	345	
7.11	Compatibility test	346	
7.12	Agrochemical mixtures	347	
7.13	Fungicides and insecticides mixture	348	
7.14	Persistence of agrochemicals	352	
7.15	Fate of agrochemicals in soil	353	
7.16	Factors affecting the persistence of agrochemicals	354	
7.16.1	Chemical factors	355	
7.16.2	Plant factors	357	
7.16.3	Soil factors	359	
7.16.4	Environmental factors	361	
7.17	Properties of agrochemicals	363	
7.18	Environmental fate of agrochemicals	367	
7.19	Agrochemicals and forest animals	369	
7.20	Biodegradation/Bioremediation of agrochemicals in soil	371	
7.20.1	Chemical reactions and biodegradation	375	
7.21	Enzymatic basis of agrochemicals	375	
7.22	Strategies for biodegradation	376	
7.23	Rhizoremediation of agrochemicals	377	
	<i>References</i>	378	
8.	Pollution and Hazards by Agrochemicals		382—446
8.1	Agrochemicals and their effect	382	
8.2	Effect on soil	385	
8.2.1	Impact of agrochemicals on soil quality	388	
8.2.2	Consequences of soil degradation	389	
8.3	Effects on water	390	
8.3.1	Agrochemicals can contaminate groundwater	391	
8.3.2	Repercussions of water pollution	394	
8.3.3	Management practices for protecting water quality	396	
8.3.4	Checklist for protecting water from agrochemicals	397	
8.3.5	Solutions	397	
8.4	Effects on plants	398	
8.5	Effect on animals	401	
8.5.1	Effect on dogs and cats	402	

- 8.6 Effect on bees 403
- 8.7 Effect on frogs 407
- 8.8 Effect on birds 408
- 8.9 Effect on bats 410
- 8.10 Effect on wild life 411
- 8.11 Effect on aquatic life 413
- 8.12 Effect on amphibians 413
- 8.13 Effects on human health 415
- 8.13.1 Types of toxicity 415
- 8.13.2 Symptoms of agrochemical poisoning 416
- 8.14 Environmental hazards 420
- 8.14.1 Perspective and recommendations 421
- 8.14.2 Ecological effects of agrochemicals 422
- 8.14.3 Agrochemicals and water quality in the developing countries 424
- 8.14.4 Categories agrochemicals based on the hazard 425
- 8.14.5 Hazard Communication 426
- 8.14.6 Misconceptions on environmental pesticide hazards 428
- 8.14.7 Minimizing environmental hazards due to persistent agrochemicals 428
- 8.14.8 Hazard and risk assessment of substances: The HSAC approach 429
- 8.14.9 Pollution, residues and health hazards by agrochemicals 430
- 8.15 Risk assessment of agrochemicals: Assessment of exposure from all sources 433
- 8.16 Agrochemicals as hazardous waste 436
- 8.17 Agrochemicals and soil environment 439
- 8.18 Agrochemicals and biomagnifications 442
- 8.19 Misconceptions on environmental agrochemical hazards 442
- References* 443
- 9. New Generation Fungicides 447—508**
- 9.1 Major categories 447
- 9.2 New fungicide categories 450
- 9.2.1 Respiration inhibitors 450
- 9.2.2 Complex II inhibitors 450
- 9.2.3 The oomycetes fungicide family 452
- 9.2.4 Cereal fungicides 452
- 9.2.5 Triazoles 453
- 9.2.6 Strobilurins 453
- 9.2.7 Proteomics-based fungicides 457
- 9.2.8 Classic chemical antifungal biocides 458
- 9.3 New protein-based strategies to classical chemical fungicide design 459
- 9.4 Recently introduced fungicide molecules 461
- 9.4.1 The non-antimicrobial disease-resistance inducers 464
- 9.4.2 QOI fungicides 465
- 9.4.3 QII fungicides 465
- 9.4.4 Amidoxime 466
- 9.4.5 Propylquinazolin 467
- 9.4.6 Benzophenones 467
- 9.4.7 Triazole group/Sterol biosynthesis inhibitors (SBIs)/Ergosterol Biosynthesis Inhibitors (EBIs)/Demethylation Inhibiting fungicides (DIM) 468
- 9.4.8 Class I DMI-Fungicides 469
- 9.4.9 Class II Amines 469
- 9.4.10 Class III Hydroxyanilide fungicides 469
- 9.4.11 Propiconazole 471
- 9.4.12 Inhibitors of squalene epoxidation 471
- 9.4.13 Inhibitors of C14-demethylation or DMIs 472
- 9.4.14 Inhibitors of Δ 14-reduction and/or Δ 8 7-isomerisation 474
- 9.4.15 Inhibitors of C4-demethylation 475
- 9.4.16 Triforine 477
- 9.4.17 Anilinopyrimidines 477
- 9.4.18 Phenylpyrroles 480
- 9.4.19 Hydroxyanilides 482
- 9.4.20 Phenoxyquinolines 485
- 9.4.21 Benzamides and Valinamides 486
- 9.4.22 Imidazolinones 490
- 9.4.23 Oxazolidinones 490
- 9.4.24 Acetamide compounds 492
- 9.4.25 Isothiazolecarboxamides 492
- 9.4.26 Pyrazole-carboxamides 493
- 9.4.27 Pyridinyl ethyl benzamides 495
- 9.4.28 Benzimidazoles 498
- 9.4.29 Succinate Dehydrogenase Inhibitors (SDHI) 499
- 9.4.30 Carboxynilides 503
- 9.4.31 Arylamino pyridines 503
- 9.4.32 Triazolinthiones 504
- 9.4.33 Pyrimorph 504
- References* 505

Glossary	509–521	Annexure II: Alphabetical List of Some Fungicides, Bactericides and Nematicides by the Active Ingredient/s	526–554
Annexure I: Alphabetical List of Some Fungicides and Bactericides by Trade Names	522–525	Annexure III: Reading the Label	555–556
		Annexure IV: Calculation & Preparation of Agrochemical Spray Volume	557