MANAGEMENT METHODS OF INSECT–PEST

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PREFACE

Pest insects cause significant losses to food and fibre crops all over the world. They also transmit diseases to humans and domestic animals. The use of pesticides as the sole method of control has resulted in insect resistance as well as negative effects on human health, natural enemies, and the environment. In response to the negative effects of pesticides, the concept of integrated pest management (IPM) was developed nearly 60 years ago. Currently, IPM is a strong pest control paradigm all over the world. This chapter examines the history of IPM, its fundamental principles, decision-making rules, components, and primary tactical methods. Innovative tactical methods are discussed, including sterile insect technique (SIT), incompatible insect technique (IIT), and push-pull strategy. Furthermore, the implementation challenges and future prospects of IPM are highlighted.

An integrated survey of the biological foundation, principles, and methods of insect pest management, featuring representative papers by field leaders. Insect problems in agriculture are highlighted, with examples of developing programmes and techniques in the modelling, analysis, and application of insect pest management. Plant resistance, parasitoids, and the roles of diseases and insecticides in pest management are all covered. Extensive references and numerous practical examples of pest management usage are provided.

This book **Management Methods of Insect - Pest** covers pest outbreak monitoring and forecasting, yield loss and impact assessments, and all of the most recent methods for controlling and managing insects. It covers host manipulation, plant resistance, biological control, interference, agronomic precision control methods, and insecticides, as well as the socioeconomic and research management aspects of developing integrated pest management approaches.

This essential text is still required reading for students, researchers, and industry scientists involved in all aspects of insect pest management, applied entomology, crop protection, and medical and veterinary entomology.

CONTENT

ABOUT THE EDITORS

Amit Kumar Patel, *an alumni of Bundelkhand University, is an assistant professor of Agriculture Entomology at Dr. C.V. Raman University, Vaishali, Bihar. He has published 15 research papers in various NASS rated national as well as international journals, 12 popular articles, published 2 book chapters and presented papers in national and international seminars and conferences. He has got several awards including young Entomologist award, Young Achievers Award and Young Scientist Award and Best Oral Presentation Award.*

Dr. Tanmay Ghosh, *presently working as Assistant Professor, Department of Microbiology, Dinabandhu Andrews College, University of Calcutta. He completed his early study from Tarakeswar High School. He did B.Sc and M.Sc from University of Calcutta in the subject of Microbiology. He did his PhD degree from Department of biotechnology, NIT, Durgapur. He did his PhD degree from Department of biotechnology, NIT, Durgapur. He is now pursuing post doctoral degree (Doctor of Science, D.Sc) from University of California. His research as well as topic of interest on Agriculture, Microbiology, Seed Pathology and Environment. He has published book on medicinal plants. He is actively engaged in research activity having 65 scientific research articles in international reputated peer-reviewed journal, UGC approved journal and in Scopus listed journal, Springer, Elsevier. He awarded by several prestigious awards like best paper award on Agriculture, Life science, Environment and Biotechnology from International Seminar. He has published 25 international book chapter ,has 6 international books written by him. He was awarded by "Hooghly Ratna" for research on Microbiology, Agriculture, Mycology and Bacteriology from Kumud Sahitya Mela. He is an active participant on all sorts of extension activities, regular giving his speech and act as a resource person in all India Radio, Television. He is an expert on organizing of National & International Seminars.*

Indrayani Gawas, *She has completed her Bsc in horticulture (2017), MSc. (2019) with 1st class In Plantation spices medicinal and aromatic crops and currently pursuing Ph.D. in university, Dr. Balasaheb sawant konkan krishi vidyapeeth Dapoli. She has also passed JRF and SRF exams conducted by ICAR. She has published five research papers in various NASS rated national as well as international journals, six popular articles, published four book chapters and more than seven abstracts in seminar and conferences. She has got six awards in various national and international conferences and seminars including young horticulturist award and best research scholar award, best oral presentation awards.*

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