



Theory and Practice of **Integrated Pest Management**

Ramesh Arora, Balwinder Singh, A.K. Dhawan



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Theory and Practice of Integrated Pest Management

**Ramesh Arora
Balwinder Singh
A.K. Dhawan**

Department of Entomology
Punjab Agricultural University, Ludhiana

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PREFACE

Insect pests have been associated with agricultural crops since the dawn of civilization. In traditional agriculture, the yields obtained were low and farmers accepted some losses due to insect pests as inevitable. Slowly, the farmers developed a number cultural and mechanical control of practices to minimize these losses. The increasing food and fibre requirements of expanding population necessitated intensification of agriculture through introduction of high yielding varieties, expansion in irrigation facilities and application of increased amounts of agrochemicals. The advent of synthetic organic insecticides during 1940s and 1950s enabled us for the first time to gain an upper hand in the battle against insects.

However, there is evidence that insect pest problems have escalated with an increasing cropping intensity and with the use of agrochemicals inherent in modern agriculture. Consequently, Indian plant protection scientists have intensified research on the development of pest management tactics and effective pest management systems have been designed for all the important crops in the country.

This book, consisting of 29 chapters, draws together the diverse literature on the subject of insect pest management in agriculture and contains contributions written by scientists having extensive experience with insect pest problems in Indian agriculture.

The first half of the book is devoted to the principles and components of pest management including factors affecting pest populations, construction of life tables, coevolution of insects and plants, pest forecasting, pesticides, IGRs, botanicals, entomopathogenic nematodes and molecular approaches, etc. A separate chapter has been devoted to the role of information technology in IPM. The different tactics for the management of major insect pests of principal agricultural crops of India, viz. rice, maize, wheat, forage crops, cotton, sugarcane, vegetables, fruits, oilseeds, pulse crops, jute and mesta and tobacco have been discussed in the second half of the book. The book is largely based on chapters contributed by invited experts for a 'Winter School' on Advances in Agricultural Entomology held during Dec., 2010 to Jan., 2011 at the Department of Entomology, PAU, Ludhiana. Some chapters have, however, been added to strengthen the subject matter.

We are thankful to all the contributors for the meticulous job they have done in preparing their respective chapters in accordance with the

theme of the book and within the stipulated period. We are also thankful to Mr. Sandeep Singh and Mr. Sudhendu Sharma, both from the Department of Entomology, PAU, Ludhiana and Mr. H.M. Yeshwanth Department of Entomology, UAS, Bangalore for permission to use the photographs reproduced on the cover page of the book.

The book contains a wealth of information on all aspects of insect pest management in agriculture under Indian conditions and would prove indispensable for not only students, teachers and researchers in agricultural entomology but also for administrators, planners and field level extension functionaries implementing agricultural development programmes in India and other developing countries.

Editors

15th August, 2011
Ludhiana

CONTRIBUTORS

Naveen Aggarwal

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

P.K. Arora

Punjab Agricultural University
Regional Research Station
Abohar-152 116

Ramesh Arora

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

D.S. Brar

Department of Entomology
Punjab Agricultural University
Ludhiana - 141 004

H.K. Cheema

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

A.K. Dhawan

Department of Entomology
Punjab Agricultural University
Ludhiana - 141 004

L.V. Ghetiya

Bidi Tobacco Research Station
Anand Agricultural University
Anand-388 110

R.S. Gill

Department of Entomology
Punjab Agricultural University
Ludhiana- 141 004

V.K. Gupta

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

Vikas Jindal

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

B.K. Kang

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

Uma Kanta

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

Sandeep Kaur

Department of Vegetable Crops
Punjab Agricultural University
Ludhiana-141 004

Sarwan Kumar

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

Vijay Kumar

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

M.S. Mahal

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

D.M. Mehta

Bidi Tobacco Research Station
Anand Agricultural University
Anand-388 110

A.D. Patel

Bidi Tobacco Research Station
Anand Agricultural University
Anand-388 110

T. Ramasubramaniana

Division of Crop Protection
Central Research Institute for
Jute and Allied Fibres (ICAR)
Barrackpore, Kolkata-700 120

I.P.S. Sandhu

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

P.S. Sarao

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana- 141 004

S. Satpathy

Division of Crop Protection
Central Research Institute for
Jute and Allied Fibres (ICAR),
Barrackpore
Kolkata-700 120

D.R. Sharma

Department of Horticulture
Punjab Agricultural University
Ludhiana-141 004

P.S. Shera

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

Balwinder Singh

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

Beant Singh

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

Gursharan Singh

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

Ravinder Singh

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

Sandeep Singh

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

K.S. Suri

Department of Entomology
Punjab Agricultural University
Ludhiana-141 004

G.K. Taggar

Department of Plant Breeding
and Genetics
Punjab Agricultural University
Ludhiana-141 004

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