and discussed in chapter 25. A brief analysis of the future of IPM in the tropics, the constraints and suggestions to alleviate them is the theme of the last chapter.

The book in two volumes with the foreword of Prof Marcos Kogan, Director Emeritus, Integrated Plant Protection Center, Oregon State University, USA, reiterates the need for IPM to be multidisciplinary, to integrate all tools and practices and to involve all concerned stakeholders. The authors have taken tremendous effort in compiling the information on pests, their management and presenting the same in a lucid manner. The references listed will be useful for deeper insight into the realm of IPM. This book will serve as an invaluable resource to students, researchers, scientists and extension specialists associated with entomology and IPM in agriculture and will be an asset to the Libraries of all the Universities.

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BOOK REVIEW

Mealybugs and their management in Agricultural and Horticultural Crops

Editors: M. Mani and C. Shivaraju

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Mealybugs are common sap feeding pests that infest a wide range of agricultural and horticultural crops. Besides weakening the plants, the honey dew secreted by mealybugs allow the growth of sooty mould, giving the plants a blackened appearance. Severe infestations can reduce plant vigour and lead to stunted growth and premature leaf fall. In India, different species of mealy bugs (viz. Planococcus citri, Planococcus lilacinus, Macellicoccus hirsutus, Paracoccus marginatus, Phenacoccus solenopsis etc.) have become major pests on various crops. Recently, invasive species like Phenacoccus madeirensis and Pseudococcus jackbeardsleyi have been recorded as serious pests on several host plants. The cassava mealy bug Phenacoccus manihoti, one of the most serious pests of cassava worldwide, has recently reached Asia, raising significant concern over its potential spread throughout the region and entering India. The area of infestation include undersurface of leaves, plant stems, entire fruits or fruit clusters, etc. The tendency of mealy bug nymphs and adults to live and multiply in semi-concealed parts of plants and their waxy coating make them “hard to kill” insects using chemical insecticides. Excessive use of insecticides for management of mealybug infestations on horticultural crops can lead to serious issues of pesticide residues, affecting the export market. At this juncture, this book on “Mealybugs and their management in Agricultural and Horticultural Crops” (Edited by M. Mani and C. Shivaraju) is an excellent attempt to compile all available information identification, biology, cytogenetics, population dynamics and management of mealybugs with an emphasis on the Indian perspective. The senior editor Dr. M. Mani has over three decades of experience in mealybug research, especially biological control and has contributed some of the significant initial chapters in the book. The contributing authors of the different chapters have succeeded in presenting information on the basic aspects and also on the seasonal occurrence and management of mealy bugs on different crops.

This book would be highly relevant as a reference book for students, researchers and extension workers and can be recommended as a useful addition in Libraries of all Agricultural Universities, Research Institutes and state Departments of Agriculture and Horticulture.

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