

BOOK REVIEW

BIOLOGICAL SUPPRESSION OF PLANT DISEASES, PHYTOPARASITIC NEEMATODES AND WEEDS.
Edited by S. P. Singh and S. S. Hussaini, Project Directorate of Biological Control, Bangalore-560 024, India, 284 pp., Rs.250, Softback.

This publication is divided into three sections comprised of 18 review chapters and recommendations.

The first section - Biological suppression of Plant diseases is having eight chapters and an introduction. First chapter discussed prospects of biocontrol of plant diseases, and identified the critical areas that need immediate attention. Second chapter summarized biocontrol work on major diseases of plantation crops. Chapter 3 dealt with mass production technology for fungal antagonists and their field evaluation. Fourth chapter covered bio-suppression of fungal pathogens of commercial crops with fungal antagonists, registration requirements and quality control aspects. Role of secondary metabolites of *Pseudomonas fluorescens* in the biocontrol of plant pathogens has been described and genetic-engineering for improved production of microbial metabolites have been suggested in chapter 5.

Most of the successes in biological control of plant diseases reported are based on laboratory and greenhouse studies. Chapter 6 highlighted the bio-suppression of major diseases of field crops using bacterial antagonists. Biological control of major diseases of rice and other cereals with bacterial antagonists has been summarized in chapter 7. Future line of research in engineering of bacterial strains with chitinases or other antifungal proteins has been suggested. Authors placed high optimism on transgenic plants for future disease management. Chapter 8 presented epidemiological studies of plant pathogens with special reference to wheat, and suggested increasing the effectiveness of biocontrol by selecting bioagents suitable to prevailing environmental conditions.

Section 2, represented 4 chapters. Chapter 1 highlighted the status of biological suppression of plant parasitic nematodes by predaceous and parasitic organisms. Subsequent chapter summarized the role of bacterial antagonists in suppression of plant parasitic nematodes with obligate parasites and rhizosphere bacteria. Chapter 3 and 4 covered the work on antagonists of plant parasitic nematodes on horticultural and plantation crops. Conclusions were drawn that antagonists can be effectively utilized in integrated nematode management under field conditions.

Section 3 covered 3 chapters on biological suppression of weeds with pathogens, and 2 on use of entomophilic nematodes for the suppression of insect pests. Chapter 1 presented review on advantages and disadvantages of using pathogens in weed control and success story of introduction of specific pathogens. Surprisingly, under the bio-herbicide, it has been mentioned that *Parthenium* can be controlled with *Sclerotium rolfsii* and *Sclerotinia sclerotiorum* which could lead to problem, because these are ubiquitous pathogens. In chapter 2 biological suppression of aquatic weeds with fungal pathogens has been discussed. So far very little success has been achieved in this regard. Chapter 3 presented biological suppression of *Parthenium* with pathogens and placed high hopes on usefulness of these as mycoherbicides. The author advocated the introduction of rust pathogen from UK for which I would like to caution. The weather conditions of UK are altogether different than that of most of Indian parts. While mentioning, possible use of *S. rolfsii* in non-cropped areas, he forgot that *S. rolfsii* is having wide host spectrum and can spread easily to cropped areas.

Chapter 4 highlighted the use of entomophilic nematodes for the suppression of insect pests and presented key for their identification. The last chapter covered present status of entomophilic nematodes on insect pests control along with check list of effective entomophilic nematodes. Mass production of entomophilic nematodes on synthetic media, their formulation, storage, application technology, etc. were also discussed. Field application of entomophilic nematodes with other biocontrol agents has limitations. Therefore, conservation and augmentation of natural nematode population should get priority through proper management practices.

Editing was not very convincing since there are a lot of mistakes in the printing which reduces the readability of the book. Editors should have used their judgment while accepting some of the articles. A few titles are overlapping. Over emphasis by some of the authors on prospects of biocontrol could have been moderated while editing. Barring these shortcomings, this book is a very useful compilation of information on biocontrol of plant diseases, weeds and phytoparasitic nematodes which would find place in libraries, industrial houses and in hands of researchers.

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